

Access DB# 176617**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 1-12-2006  
Art Unit: 1752 Phone Number 301-2-1333 Serial Number: 121716, 785  
Mail Box and Bldg/Room Location: 9060 Results Format Preferred (circle): PAPER DISK E-MAIL

(Rem.)

**If more than one search is submitted, please prioritize searches in order of need.**

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Plz. See Bib.

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: 11-19-03

*\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Plz. search for a polymer having a silsesquioxane backbone and a cyclic ketal pendant acid-labile moiety, wherein the cyclic ketal pendant acid-labile moiety comprises <sup>any</sup> one of the structures shown in

Q. # 1

SCIENTIFIC REFERENCE BR  
Sci. & Tech. Info. Cntr

JAN 13

Pat. &amp; T M Office

(TRIED TO PRINT CLOSEST ART TOWARD THE BEGINNING.)

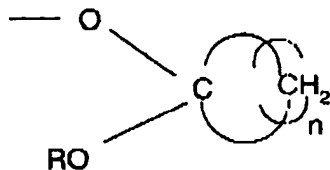
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	Type of Search	Vendors and cost where applicable
Searcher: <u>ES</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>1-13-06</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

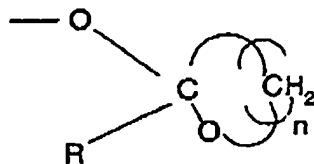
Application No. 10/716,785

**Listing of Claims:**

1. (Currently Amended) A resist composition, said composition comprising an acid-sensitive imaging polymer including a silsesquioxane backbone and a solubility inhibiting cyclic ketal pendant acid-labile moiety having a low activation energy less than about 20 kcal/mol for acid-catalyzed cleaving, wherein said acid-labile moiety is cleavable at room temperature, and wherein said cyclic ketal acid-labile moiety comprises a structure of the form



or



where n is any integer from 2 to 15 and R is an alkyl or a halogenated alkyl, and wherein at least a portion of said imaging polymer is fluorinated.

2. (Original) The resist composition of claim 1, further comprising a radiation-sensitive acid generator.

3. (Original) The resist composition of claim 1, wherein said imaging polymer further comprises a pendant solubility promoting moiety.



## UNITED STATES PATENT AND TRADEMARK OFFICE

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## \*BIBDATASHEET\*

CONFIRMATION NO. 6138

Bib Data Sheet

SERIAL NUMBER 10/716,785	FILING DATE 11/19/2003  RULE	CLASS 430	GROUP ART UNIT 1752	ATTORNEY DOCKET NO. FIS920030377US1
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APPLICANTS

Wu-Song Huang, Poughkeepsie, NY;  
 Robert D. Allen, San Jose, CA;  
 Marie Angelopoulos, Cortlandt Manor, NY; Rane W. Kwong, Wappingers Falls, NY;  
 Ratnam Sooriyakumaran, San Jose, CA;

\*\* CONTINUING DATA \*\*\*\*\*  
 None SJL

\*\* FOREIGN APPLICATIONS \*\*\*\*\*  
 None SJL

IF REQUIRED, FOREIGN FILING LICENSE GRANTED  
 \*\* 02/18/2004

Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	STATE OR COUNTRY NY	SHEETS DRAWING 0	TOTAL CLAIMS 30	INDEPENDENT CLAIMS 2
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35 USC 118 (a-d) conditions met  
☐ yes ☒ no ☐ Met after Allowance

Verified and Acknowledged  
 Examiner's Signature: *[Signature]* Initials: SJL

ADDRESS  
 32074  
 INTERNATIONAL BUSINESS MACHINES CORPORATION  
 DEPT. 18G  
 BLDG. 300-482  
 2070 ROUTE 52  
 HOPEWELL JUNCTION, NY  
 12533

TITLE  
 Silicon-containing resist systems with cyclic ketal protecting groups

FILING FEE	FEES: Authority has been given in Paper	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of
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L1 123632 S HUANG ?/AU  
L2 29633 S ALLEN ?/AU  
L3 479 S ANGELOPOULOS ?/AU  
L4 119 S SOOR!YAKUMARAN ?/AU  
L5 2 S L1 AND L2 AND L3 AND L4  
SEL L5 1-2 RN

FILE 'REGISTRY' ENTERED AT 13:55:42 ON 13 JAN 2006

L6 12 S E1-E12  
L7 2 S L6 AND SI/ELS  
L8 10 S L6 NOT L7  
SEL L8 1-9 RN  
L9 9 S E13-E21

FILE 'HCA' ENTERED AT 14:06:07 ON 13 JAN 2006

L10 1758 S (?SILSESQUIOXAN? AND (?FLUORO? OR ?FLUORI?)) OR ?FLUORO

FILE 'HCA' ENTERED AT 14:09:12 ON 13 JAN 2006

L11 1780 S (?SILSESQUIOXAN? AND (?FLUORO? OR ?FLUORI? OR F(A) (CONT  
L12 69833 S KETAL# OR ACETAL# OR HEMIKETAL# OR HEMIACETAL#  
L13 8 S L11 AND L12

FILE 'REGISTRY' ENTERED AT 14:11:11 ON 13 JAN 2006

L14 77038 S SI/ELS AND PMS/CI

FILE 'HCA' ENTERED AT 14:12:36 ON 13 JAN 2006

L15 71561 S L14

FILE 'REGISTRY' ENTERED AT 14:13:08 ON 13 JAN 2006

L16 8815 S L14 AND F/ELS

FILE 'HCA' ENTERED AT 14:13:29 ON 13 JAN 2006

L17 4374 S L16  
L18 34 S L17 AND L12  
L19 111856 S PENDANT? OR SIDECHAIN? OR SIDEARM? OR LARIAT? OR DANGL?  
L20 3 S L18 AND L19

L21 443 S L15 AND L12  
L22 13 S L21 AND L19  
L23 8003 S L9  
L24 11 S L23 AND L11  
L25 30 S L23 AND L17  
L26 2 S L25 AND L19  
L27 107 S L23 AND L15  
L28 9 S L27 AND L19

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L29 STR

FILE 'REGISTRY' ENTERED AT 14:24:27 ON 13 JAN 2006

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L31 61131 S L29 FUL  
SAV L31 LEE785/A  
L32 7368 S L31 AND F/ELS

FILE 'HCA' ENTERED AT 14:26:54 ON 13 JAN 2006

L33 5773 S L32  
L34 76857 S L31  
L35 46 S L33 AND (L12 OR L23)  
L36 2 S L35 AND L19  
L37 24 S L33 AND L12  
L38 24 S L33 AND L23  
L39 2 S L37 AND L38  
L40 694 S L34 AND (L12 OR L23)  
L41 16 S L40 AND L19  
L42 9375 S CYCLI? (2A) L12  
L43 1 S L42 AND L18  
L44 13 S L42 AND L21  
L45 1 S L42 AND L35  
L46 25 S L42 AND L40

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L47 STR

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L49 STR L47  
L50 3 S L49 AND L29 SSS SAM SUB=L31  
L51 76 S L49 AND L29 SSS FUL SUB=L31  
SAV L51 LEE785A/A  
L52 27759 S L31 AND PMS/CI  
L53 46 S L51 AND L52  
L54 18 S L51 AND F/ELS

FILE 'HCA' ENTERED AT 14:44:23 ON 13 JAN 2006

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L55      18 S L54
L56      29 S L53
L57      54 S L51
L58      9780 S ?SILSESQUIOXAN?
L59      11 S L55 AND L58
L60      14 S L56 AND L58
L61      14 S L57 AND L58
L62      0 S L55 AND L12
L63      1 S L56 AND L12
L64      4 S L57 AND L12
L65      3 S (L55 OR L56 OR L57) AND L19
L66      22 S L13 OR L20 OR L26 OR L28 OR L36 OR L43 OR L45 OR L63 OR
L67      54 S (L22 OR L24 OR L41 OR L44 OR L59 OR L60 OR L61 OR L65)
L68      68 S (L18 OR L25 OR L37 OR L38) NOT (L66 OR L67)
L69      21 S L66 AND (1840-2003/PY OR 1840-2003/PRY)
L70      45 S L67 AND (1840-2003/PY OR 1840-2003/PRY)
L71      66 S L68 AND (1840-2003/PY OR 1840-2003/PRY)

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FILE 'REGISTRY' ENTERED AT 14:58:00 ON 13 JAN 2006

=> d l51 que stat

L29 STR

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      4
      G1
      X 2
G1 X Si X C
  1 X 3
      G1
      5

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VAR G1=O/X

NODE ATTRIBUTES:

NSPEC IS RC AT 3

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

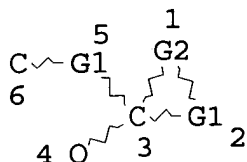
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 5

STEREO ATTRIBUTES: NONE

L31 61131 SEA FILE=REGISTRY SSS FUL L29

L49 STR



REP G1=(0-1) O  
 REP G2=(2-15) C  
 NODE ATTRIBUTES:  
 NSPEC IS RC AT 6  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE  
 L51 76 SEA FILE=REGISTRY SUB=L31 SSS FUL L49 AND L29

100.0% PROCESSED .8626 ITERATIONS 76 ANSWERS  
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=> d 169 1-21 cbib abs hitstr hitind

L69 ANSWER 1 OF 21 HCA COPYRIGHT 2006 ACS on STN  
 142:472607 Silicon-containing photoresist systems with **cyclic ketal** protecting groups. Huang, Wu-song; Allen, Robert D.; Angelopoulos, Marie; Kwong, Rane W.; Sooriyakumaran, Ratnam (International Business Machines Corporation, USA). U.S. Pat. Appl. Publ. US 2005106494 A1 20050519, 13 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-716785-20031119.

AB Inventive **silsesquioxane** polymers are provided, and photoresist compns. that contain such **silsesquioxane** polymers are provided in which at least a portion of the **silsesquioxane** polymer contains **fluorinated**

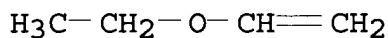
App.

moieties, and at least a portion of the **silsesquioxane** polymer contains **pendant** soly. inhibiting **cyclic ketal** acid-labile moieties that have low activation energy for acid-catalyzed cleaving. The inventive polymer also contains **pendant** polar moieties that promote alk. soly. of the resist in aq. alk. solns. The inventive polymers are particularly useful in pos. resist compns. The invention encompasses methods of using such photoresist compns. in forming a patterned structure on a substrate, and particularly multilayer (e.g. bilayer) photolithog. methods, which methods are capable of producing high resolu. images at wavelengths such as 193 nm and 157 nm.

IT 109-92-2D, Ethyl vinyl ether, reaction product with **silsesquioxane** 931-57-7D, 1-Methoxycyclohexene, reaction product with **silsesquioxane** 1122-84-5, 1-Ethoxycyclohexene 75091-99-5, 4-(Trifluoromethyl)cyclohexanone 207385-10-2D, Methoxypropene, reaction product with **silsesquioxane**  
(silicon-contg. resist systems with **cyclic ketal** protecting groups)

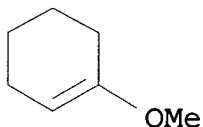
RN 109-92-2 HCA

CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



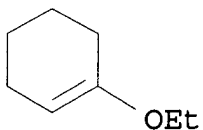
RN 931-57-7 HCA

CN Cyclohexene, 1-methoxy- (9CI) (CA INDEX NAME)



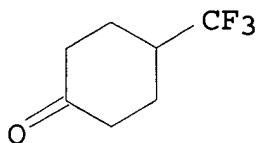
RN 1122-84-5 HCA

CN Cyclohexene, 1-ethoxy- (9CI) (CA INDEX NAME)

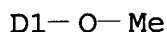


RN 75091-99-5 HCA

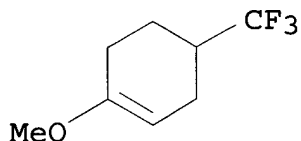
CN Cyclohexanone, 4-(trifluoromethyl)- (9CI) (CA INDEX NAME)



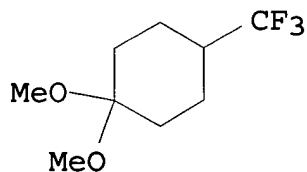
RN 207385-10-2 HCA  
 CN 1-Propene, methoxy- (9CI) (CA INDEX NAME)



IT 851685-61-5P 851685-64-8P 851713-73-0P  
 (silicon-contg. resist systems with **cyclic**  
**ketal** protecting groups)  
 RN 851685-61-5 HCA  
 CN Cyclohexene, 1-methoxy-4-(trifluoromethyl)- (9CI) (CA INDEX NAME)



RN 851685-64-8 HCA  
 CN Cyclohexane, 1,1-dimethoxy-4-(trifluoromethyl)- (9CI) (CA INDEX NAME)

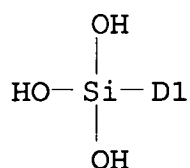
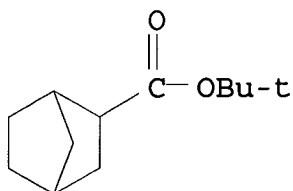


RN 851713-73-0 HCA  
 CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(trihydroxysilyl)-, 1,1-dimethylethyl ester, polymer with (3,3,3-trifluoro-2-hydroxypropyl)silanetriol (9CI) (CA INDEX NAME)

CM 1

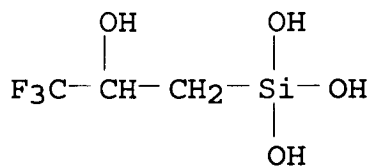
CRN 851713-72-9

CMF C12 H22 O5 Si  
CCI IDS



CM 2

CRN 850536-54-8  
CMF C3 H7 F3 O4 Si



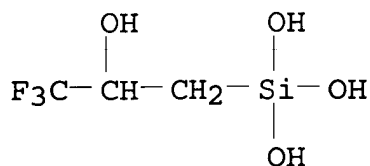
IT 850536-55-9DP, reaction product with vinyl compd.  
(silicon-contg. resist systems with **cyclic**  
**ketal** protecting groups)

RN 850536-55-9 HCA

CN Silanetriol, (3,3,3-trifluoro-2-hydroxypropyl)-, homopolymer (9CI)  
(CA INDEX NAME)

CM 1

CRN 850536-54-8  
CMF C3 H7 F3 O4 Si



IC ICM G03C001-492

INCL 430270100

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST silicon photoresist **cyclic ketal** protecting group

IT Photoresists

(silicon-contg. resist systems with **cyclic ketal** protecting groups)

IT **Silsesquioxanes**

(silicon-contg. resist systems with **cyclic ketal** protecting groups)

IT 67-56-1, Methanol, reactions 109-92-2D, Ethyl vinyl ether, reaction product with **silsesquioxane** 931-57-7D, 1-Methoxycyclohexene, reaction product with **silsesquioxane** 1122-84-5, 1-Ethoxycyclohexene 75091-99-5, 4-(**Trifluoromethyl**)cyclohexanone 207385-10-2D, Methoxypropene, reaction product with **silsesquioxane** (silicon-contg. resist systems with **cyclic ketal** protecting groups)

IT 851685-61-5P 851685-64-8P 851713-73-0P

(silicon-contg. resist systems with **cyclic ketal** protecting groups)

IT 850536-55-9DP, reaction product with vinyl compd.

(silicon-contg. resist systems with **cyclic ketal** protecting groups)

L69 ANSWER 2 OF 21 HCA COPYRIGHT 2006 ACS on STN

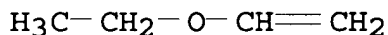
142:420063 Low-activation energy silicon-containing resist system.

Huang, Wu-Song; Allen, Robert D.; Angelopoulos, Marie; Kwong, Ranee W.; Sooriyakumaran, Ratnam (International Business Machines Corporation, USA). U.S. Pat. Appl. Publ. US 2005089792 A1 20050428, 11 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-693199 20031024.

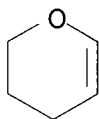
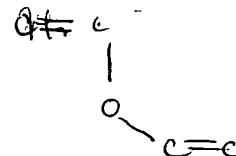
AB Inventive silsesquioxane polymers are provided, and resist compns. that contain such silsesquioxane polymers are provided in which at least a portion of the silsesquioxane polymer contains fluorinated moieties, and at least a portion of the silsesquioxane polymer contains **pendant** soly. inhibiting acid-labile moieties that have low activation energy for acid-catalyzed cleaving, and the

presence of high optical d. moieties are minimized or avoided. The inventive polymer also contains **pendant** polar moieties that promote alk. soly. of the resist in aq. alk. solns. The inventive polymers are particularly useful in pos. resist compns. The invention encompasses methods of using such resist compns. in forming a patterned structure on a substrate, and particularly multilayer (e.g. bilayer) photolithog. methods, which methods are capable of producing high resolu. images at wavelengths such as 193 nm and 157 nm.

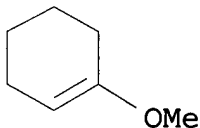
- IT 109-92-2DP, Ethylvinyl ether, reaction product with fluorosilsesquioxane polymer 110-87-2DP, Dihydropyran, reaction product with fluorosilsesquioxane polymer 931-57-7DP, 1-Methoxycyclohexene, reaction product with fluorosilsesquioxane polymer 207385-10-2DP, Methoxypropene, reaction product with fluorosilsesquioxane polymer 850536-55-9DP, reaction product 850552-47-5DP, reaction product with fluorosilsesquioxane polymer (low-activation energy silicon-contg. resist system contg.)
- RN 109-92-2 HCA
- CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



- RN 110-87-2 HCA
- CN 2H-Pyran, 3,4-dihydro- (8CI, 9CI) (CA INDEX NAME)



- RN 931-57-7 HCA
- CN Cyclohexene, 1-methoxy- (9CI) (CA INDEX NAME)



- RN 207385-10-2 HCA
- CN 1-Propene, methoxy- (9CI) (CA INDEX NAME)

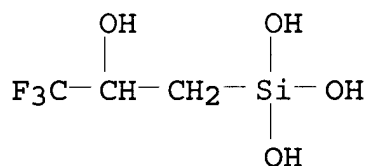


D1-O-Me

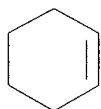
RN 850536-55-9 HCA  
 CN Silanetriol, (3,3,3-trifluoro-2-hydroxypropyl)-, homopolymer (9CI)  
 (CA INDEX NAME)

CM 1

CRN 850536-54-8  
 CMF C3 H7 F3 O4 Si



RN 850552-47-5 HCA  
 CN Cyclohexene, ethoxy- (9CI) (CA INDEX NAME)



D1-O-Et

IC ICM G03C001-76  
 INCL 430270100  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 35, 38  
 IT **109-92-2DP**, Ethylvinyl ether, reaction product with  
 fluorosilsesquioxane polymer **110-87-2DP**, Dihydropyran,  
 reaction product with fluorosilsesquioxane polymer  
**931-57-7DP**, 1-Methoxycyclohexene, reaction product with  
 fluorosilsesquioxane polymer **207385-10-2DP**,  
 Methoxypropene, reaction product with fluorosilsesquioxane polymer  
**850536-55-9DP**, reaction product **850552-47-5DP**,

reaction product with fluorosilsesquioxane polymer  
(low-activation energy silicon-contg. resist system contg.)

- L69 ANSWER 3 OF 21 HCA COPYRIGHT 2006 ACS on STN  
142:27984 Method of manufacturing high strength dental restorations from composite materials comprising photo-initiated polymerizable reactive monomers. Jia, Weitao; Jin, Shuhua (USA). U.S. Pat. Appl. Publ. US 2004241609 A1 20041202, 6 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-839696 20040505. PRIORITY: US 2003-2003/PV468935 20030508.
- AB The present invention relates to a method of the making dental restorations having photo-initiated polymerizable dental compns. The method comprises preheating a dental restoration precursor of a defined shape or anatomy in a temp. range from about 65.degree.-120.degree. C. for a length of time for the temp. to reach a temp. equil. The time preferably ranges from about 1 min to 30 min. Thereafter, the dental compn. is light cured to polymerize the dental restoration. The restoration produced through this process will have at least 10% or higher strength than the dental restorations made by conventional methods.
- IC ICM A61C013-00  
INCL 433167000; 264016000; 425174400  
CC 62-7 (Essential Oils and Cosmetics)  
IT **Acetals**  
(cyclic; method of manufg. high strength dental restorations from composite materials comprising photo-initiated polymerizable reactive monomers)
- IT Aluminosilicate glasses  
**Fluoride glasses**  
(**fluoroaluminosilicate**; method of manufg. high strength dental restorations from composite materials comprising photo-initiated polymerizable reactive monomers)
- IT **Silsesquioxanes**  
(polyhedral oligomeric; method of manufg. high strength dental restorations from composite materials comprising photo-initiated polymerizable reactive monomers)
- IT 79-41-4D, Methacrylic acid, hydroxyalkyl derivs. 80-05-7, Bisphenol A, biological studies 95-96-5, Lactide 100-42-5, Styrene, biological studies 105-60-2, .epsilon.-Caprolactam, biological studies 106-91-2, Glycidyl methacrylate 106-91-2D, Glycidyl methacrylate, condensation product with ethoxylated bisphenol A 109-16-0, Triethyleneglycol dimethacrylate 471-34-1, Calcium carbonate, biological studies 502-44-3, .epsilon.-Caprolactone 923-26-2, 2-Hydroxypropyl methacrylate 1306-06-5, Hydroxyapatite 1314-23-4, Zirconia, biological studies 1332-29-2, Tin oxide 1344-28-1, Alumina, biological studies 1565-94-2, BIS-GMA 1565-94-2D, BisGMA, polycarbonate modified 6606-59-3, 1,6-Hexanediol dimethacrylate 7727-43-7, Barium sulfate

9002-86-2, Polyvinyl chloride 9003-53-6, Polystyrene 9011-14-7, Polymethyl methacrylate 10103-46-5D, Calcium phosphate, deammoniated 10344-93-1, Acrylate, biological studies 12627-14-4, Lithium silicate 12650-28-1, Barium silicate 12676-48-1 12712-63-9, Strontium silicate 13463-67-7, Titania, biological studies 14808-60-7, Quartz, biological studies 16984-48-8, **Fluoride**, biological studies 17134-17-7D, condensation product with hydroxymethyl methacrylate 21982-30-9D, Hydroxymethyl methacrylate, condensation product with triethylene glycol bis(chloroformate) 26846-58-2, Pentaerythritol dimethacrylate 28497-59-8 32492-61-8D, Ethoxylated bisphenol A, condensation product with glycidyl methacrylate 37280-52-7, Boron strontium silicate (B<sub>2</sub>Sr(SiO<sub>4</sub>)<sub>2</sub>) 42612-27-1 50647-33-1, Barium boron silicate (BaB<sub>2</sub>(SiO<sub>4</sub>)<sub>2</sub>) 51686-31-8, Ammonium calcium phosphate 60506-81-2, DPEPA 60676-86-0, Amorphous silica 85854-45-1, Triethyleneglycol methacrylate 189320-54-5 194738-30-2

(method of manufg. high strength dental restorations from composite materials comprising photo-initiated polymerizable reactive monomers)

L69 ANSWER 4 OF 21 HCA COPYRIGHT 2006 ACS on STN

140:261374 Electrophotographic photoconductor, process cartridge, and electrophotographic printing apparatus. Yamada, Wataru; Nukada, Katsumi; Koseki, Kazuhiro; Yamashita, Takayuki; Iwasaki, Masahiro; Suzuki, Takahiro (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004086066 A2 20040318, 38 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-249593 20020828.

AB The photoconductor has a photosensitive layer involving a layer contg. a Si compd. and a resin on an elec. conductive support. The resin is sol. in a liq. in a soln. used for forming of the Si compd.-contg. layer. The photosensitive layer satisfies a condition regarding <sup>29</sup>Si NMR spectrum  $S1/(S1 + S2) \geq 0.5$  ( $S1$  = peak area from -40 ppm to 0 ppm;  $S2$  = peak area from -500 ppm to -50 ppm). The process cartridge has the photoconductor, a means of developing of a latent electrostatic image on the photoconductor, and a means of cleaning of the photoconductor by removing of residual toner after transfer of the image. The printing app. has a means of charging of the photoconductor, a means of exposing of the photoconductor for formation of a latent image, a means of transferring of the toner image, and a means of cleaning of the photoconductor, e.g., a cleaning blade. The photoconductor shows prevention of staining with the toner or products under elec. discharge and prevention of mech. damaging by the charging means, the cleaning blade, etc.

IC ICM G03G005-147

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

- IT Polyvinyl ~~acetals~~  
 (S-Lec KW-1; in electrophotog. photoconductor having silicon compd.-contg. layer showing prevention of mech. damaging on surface)
- IT Fluoropolymers, uses  
 (fine particles; in electrophotog. photoconductor having silicon compd.-contg. layer showing prevention of mech. damaging)
- IT Polysiloxanes, uses  
 (~~fluorine~~-contg.; electrophotog. photoconductor having silicon compd.-contg. layer showing prevention of mech. damaging on surface)
- IT Fluoropolymers, uses  
 Silsesquioxanes  
 (polysiloxane-; electrophotog. photoconductor having silicon compd.-contg. layer showing prevention of mech. damaging on surface)
- IT Polysiloxanes, uses  
 (~~silsesquioxane~~-; electrophotog. photoconductor having silicon compd.-contg. layer showing prevention of mech. damaging on surface)
- L69 ANSWER 5 OF 21 HCA COPYRIGHT 2006 ACS on STN  
 140:21275 ~~Acetal~~ protected polymers for photoresists  
 compositions. Malik, Sanjay; Dilocker, Stephanie J.; De Binod, B.  
 (Arch Specialty Chemicals, Inc., USA). PCT Int. Appl. WO 2003099782  
 A2 20031204, 35 pp. DESIGNATED STATES: W: JP, KR, SG;  
 RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,  
 PT, SE, TR. (English). CODEN: PIXXD2. APPLICATION: WO  
 2003-US16765 20030528. PRIORITY: US 2002-2002/PV383535 20020528.
- GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

- AB A polymer comprises an **acetal**-contg. monomer unit having the general structure I and at least one of the **fluorine**-contg. monomer units having the general structures II and III (R1, R4, R5, R6 = H, lower alkyl, CH2CO2R10, cyano, CH2CN, or halogen, wherein R10 = alkyl, cycloalkyl, aryl, arylalkyl, alkylenecycloalkyl, silyl or siloxy or linear or cyclic polysiloxane group; R2 = CHR11R12 where R11 and R12 = H, lower alkyl, cycloalkyl, aryl; A = alkylene, cycloalkylene, alkylenecycloalkylene, alkylenearylene; R3 is linear, branched or cyclic **fluoroalkyl** group or SiR13R14R15 where R13, R14, and R15 = alkyl, cycloalkyl, aryl, arylalkyl, alkylenecycloalkyl, silyl,

siloxyl, linear or cyclic polysiloxane or **silsesquioxane** alkyl; B = aryl, C( = O)-O-(CH<sub>2</sub>)<sub>x</sub> where x = 0-4, lower alkyl, cycloalkyl, alkene cycloalkyl, silyl, siloxyl, or linear or cyclic polysiloxane group; R<sub>7</sub> = H, acid sensitive group; R<sub>8</sub> and R<sub>9</sub> = H, -CN group; and y = 0-4). The invention also provides the use of the **acetal** protected polymers in radiation sensitive compns. for exposure to actinic radiation, esp. radiation of 157 nm.

IC ICM C07D

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38

ST **acetal** protected polymer UV photoresist compn

IT Photolithography  
Photoresists

(UV; **acetal** protected polymers for photoresists compns.)

IT 478705-53-2P

(**acetal** protected polymers for photoresists compns.)

IT 76-37-9DP, 2,2,3,3-**Tetrafluoro**-1-propanol, reaction products with hydroxystyrene and t-Bu vinyl ether 647-42-7DP, 3,3,4,4,5,5,6,6,7,7,8,8,8-**Tridecafluoro**-1-octanol, reaction products with hydroxystyrene and t-Bu vinyl ether 926-02-3DP, tert-Butyl vinyl ether, reaction products with hydroxystyrene, **fluoroalcs.**, heptamethylcyclotetrasiloxane propanol and dicarbonate 24424-99-5DP, Di-tert-butyl dicarbonate, reaction products with hydroxystyrene derivs. 73963-23-2DP, reaction products with hydroxystyrene and t-Bu vinyl ether 478705-53-2DP, reaction products with t-Bu vinyl ether, **fluoroalcs.**, heptamethylcyclotetrasiloxanepropanol and dicarbonate

(**acetal** protected polymers for photoresists compns.)

L69 ANSWER 6 OF 21 HCA COPYRIGHT 2006 ACS on STN

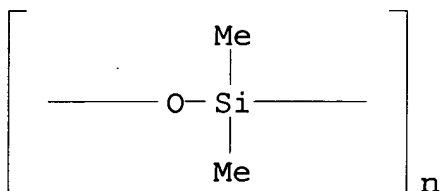
139:157440 Antireflection film using silicone-grafted fluoropolymers used on transparent substrate or image display device. Obayashi, Tatsuhiko; Hosokawa, Takashi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003222702 A2 **20030808**, 24 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-20800 20020129.

AB The film has a low-refractive-index layer contg. polymers having **side chains** grafted with (SiR<sub>1</sub>R<sub>2</sub>O)<sub>p</sub> (R<sub>1</sub>, R<sub>2</sub> = alkyl, aryl; p = 10-500) and main chains contg. F. The film has high scratch resistance and is suitable for a polarizing film and a liq. crystal display.

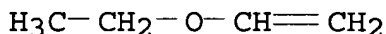
IT **9016-00-6DP**, Polydimethylsiloxane, polymers, graft  
(antireflection film using silicone-grafted fluoropolymers for image display device)

RN 9016-00-6 HCA

CN Poly[oxy(dimethylsilylene)] (8CI, 9CI) (CA INDEX NAME)



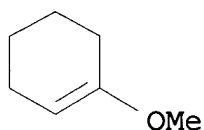
IT 109-92-2D, Ethyl vinyl ether, polymers, graft  
(antireflection film using silicone-grafted fluoropolymers for  
image display device)  
RN 109-92-2 HCA  
CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



IC ICM G02B001-11  
ICS B32B007-02; B32B027-00; B32B027-30; C08F290-06; C08F299-08;  
C08G081-00; G02F001-1335  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 38, 73  
IT 116-15-4DP, Hexafluoropropylene, polymers, graft 3678-15-7DP,  
polymers, graft 9016-00-6DP, Polydimethylsiloxane,  
polymers, graft 572911-07-0DP, polymers, graft  
(antireflection film using silicone-grafted fluoropolymers for  
image display device)  
IT 109-92-2D, Ethyl vinyl ether, polymers, graft 926-02-3D,  
tert-Butyl vinyl ether, polymers, graft 17832-28-9D, polymers,  
graft 24937-72-2D, polymers, graft 41440-38-4D, polymers, graft  
(antireflection film using silicone-grafted fluoropolymers for  
image display device)  
L69 ANSWER 7 OF 21 HCA COPYRIGHT 2006 ACS on STN  
138:245608 Etch improved photoresist systems containing acrylate (or  
methacrylate) silane monomers. Angelopoulos, Marie; Huang, Wu-song;  
Dai, Junyan; Kwong, Rane W.; Lang, Robert N.; Mahorowala, Arpan P.;  
Medeiros, David R.; Moreau, Wayne M.; Petrillo, Karen E.  
(International Business Machines Corporation, USA). U.S. Pat. Appl.  
Publ. US 2003049561 A1 20030313, 13 pp. (English).  
CODEN: USXXCO. APPLICATION: US 2001-907392 20010717.  
AB The present invention relates to a chem. amplified (CA) photoresist  
system wherein a terpolymer contg. ketal/phenolic/silicon based  
**side chains**. Among other things, the terpolymers  
provide for improved bake technologies. In another aspect a process  
for lithog. treatment of a substrate by means of

ketal/phenolic/silicon based compns. and corresponding processes for the prodn. of an object, particularly an electronic component are provided.

IT 931-57-7, 1-Methoxy-cyclohexene  
 (etch improved photoresist systems contg. acrylate (or methacrylate) silane monomers)  
 RN 931-57-7 HCA  
 CN Cyclohexene, 1-methoxy- (9CI) (CA INDEX NAME)

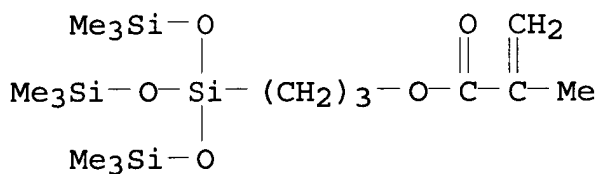


IT 116829-10-8DP, hydrolyzed and react with methoxy-cyclohexene  
 501699-41-8DP, hydrolyzed and react with methoxy-cyclohexene  
 501699-42-9P  
 (etch improved photoresist systems contg. acrylate (or methacrylate) silane monomers)  
 RN 116829-10-8 HCA  
 CN 2-Propenoic acid, 2-methyl-, 3-[3,3,3-trimethyl-1,1-bis[(trimethylsilyl)oxy]disiloxanyl]propyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 17096-07-0

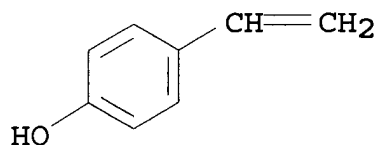
CMF C16 H38 O5 Si4



CM 2

CRN 2628-17-3

CMF C8 H8 O

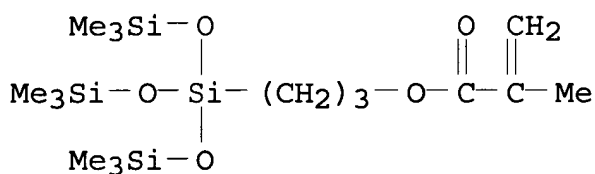


RN 501699-41-8 HCA  
 CN 2-Propenoic acid, 2-methyl-, 3-[3,3,3-trimethyl-1,1-bis[(trimethylsilyl)oxy]disiloxanyl]propyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 17096-07-0

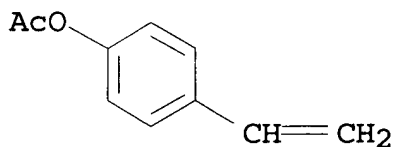
CMF C16 H38 O5 Si4



CM 2

CRN 2628-16-2

CMF C10 H10 O2

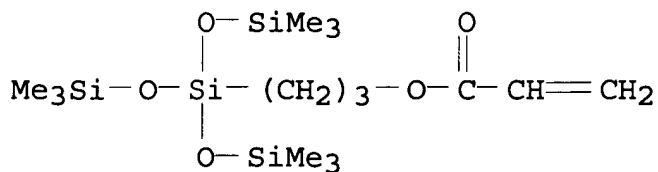


RN 501699-42-9 HCA  
 CN 2-Propenoic acid, 3-[3,3,3-trimethyl-1,1-bis[(trimethylsilyl)oxy]disiloxanyl]propyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 17096-12-7

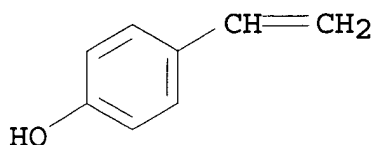
CMF C15 H36 O5 Si4



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-004

INCL 430270100; 430325000; 430326000; 430323000

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38

IT 931-57-7, 1-Methoxy-cyclohexene

(etch improved photoresist systems contg. acrylate (or methacrylate) silane monomers)

IT 116829-10-8DP, hydrolyzed and react with methoxy-cyclohexene

501699-41-8DP, hydrolyzed and react with methoxy-cyclohexene

501699-42-9P

(etch improved photoresist systems contg. acrylate (or methacrylate) silane monomers)

L69 ANSWER 8 OF 21 HCA COPYRIGHT 2006 ACS on STN

138:56385 A new route for the preparation of liquid crystalline polyorganosiloxanes containing laterally linked mesogenic units on the main chains. Guo, Guangqing; Ba, Chaoyi; Li, Hui; Zhou, Xiaoshu; Xie, Ping; Zhang, Rongben (Center for Molecular Science, Institute of Chemistry, PCLCC, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China). Liquid Crystals, 29(9), 1247-1250 (English) 2002. CODEN: LICRE6. ISSN: 0267-8292. Publisher: Taylor & Francis Ltd..

AB A new route for the prepn. of liq. cryst. polyorganosiloxanes contg. laterally linked mesogenic units on the main chains (LLM-POS) is described. First, a novel polyorganosiloxane contg. hydroquinone units on the main chains (HQ-POS) was synthesized by hydrosilylation polymn. To avoid the oxygen silylation side reaction of phenolic groups, tetrahydropyranyl (THP) protective groups were used on the phenols taking part in the hydrosilylation reaction, the results indicating that THP groups are very stable and effective in hydrosilylation reactions. Then HQ-POS was further modified by a grafting reaction with 4-n-octyloxybenzoyl chloride, giving the desired LLM-POS, which has an increased mol. mass in comparison with similar polymers prepd. by commonly used approaches. The titled LLM-POS was characterized by DSC, POM and XRD and shown to give

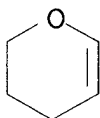
smectic textures.

IT 110-87-2

(in monomer prepn.; prepn. of liq.-cryst. diallylhydroquinone-based polysiloxanes contg. laterally linked octyloxybenzoyloxy mesogenic units on main chains)

RN 110-87-2 HCA

CN 2H-Pyran, 3,4-dihydro- (8CI, 9CI) (CA INDEX NAME)



IT 479079-02-2DP, deprotected, esters with 4-octyloxybenzoyl chloride

(prepn. of liq.-cryst. diallylhydroquinone-based polysiloxanes contg. laterally linked octyloxybenzoyloxy mesogenic units on main chains)

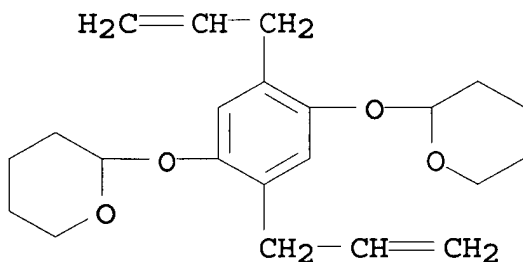
RN 479079-02-2 HCA

CN 2H-Pyran, 2,2'-[(2,5-di-2-propenyl-1,4-phenylene)bis(oxy)]bis[tetrahydro-, polymer with 1,1,3,3-tetramethyldisiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 439917-46-1

CMF C22 H30 O4



CM 2

CRN 3277-26-7

CMF C4 H14 O Si2

Me<sub>2</sub>SiH-O-SiHMe<sub>2</sub>

IT 479079-02-2P

(prepn. of liq.-cryst. diallylhydroquinone-based polysiloxanes contg. laterally linked octyloxybenzoyloxy mesogenic units on main chains)

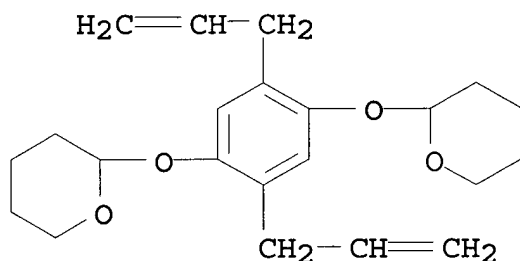
RN 479079-02-2 HCA

CN 2H-Pyran, 2,2'-[(2,5-di-2-propenyl-1,4-phenylene)bis(oxy)]bis[tetrahydro-, polymer with 1,1,3,3-tetramethyldisiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 439917-46-1

CMF C22 H30 O4



CM 2

CRN 3277-26-7

CMF C4 H14 O Si2

Me<sub>2</sub>SiH-O-SiHMe<sub>2</sub>

CC 35-10 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 75

ST liq cryst siloxane diallylhydroquinone based octyloxybenzoyloxy **side chain**; hydrosilylation polymn protected diallylhydroquinone tetramethyldisiloxane

IT 110-87-2 7390-41-2, 2,5-Diallylhydroquinone

(in monomer prep.; prep. of liq.-cryst. diallylhydroquinone-based polysiloxanes contg. laterally linked octyloxybenzoyloxy mesogenic units on main chains)

IT 40782-53-4DP, 4-n-Octyloxybenzoyl chloride, esters with hydroquinone-contg. siloxanes 479079-02-2DP, deprotected, esters with 4-octyloxybenzoyl chloride

(prepn. of liq.-cryst. diallylhydroquinone-based polysiloxanes contg. laterally linked octyloxybenzoyloxy mesogenic units on main chains)

- IT 2493-84-7P, 4-n-Octyloxybenzoic acid 40782-53-4P,  
4-n-Octyloxybenzoyl chloride 479079-02-2P  
(prepn. of liq.-cryst. diallylhydroquinone-based polysiloxanes  
contg. laterally linked octyloxybenzoyloxy mesogenic units on  
main chains)
- L69 ANSWER 9 OF 21 HCA COPYRIGHT 2006 ACS on STN
- 136:224205 Composition having refractive index sensitively changeable by  
radiation and method for forming refractive index pattern of  
gradient of refraction index (GRIN). Nishimura, Isao; Bessho, Nobuo;  
Kumano, Atsushi; Shimokawa, Tsutomu; Yamada, Kenji (Jsr Corporation,  
Japan). PCT Int. Appl. WO 2002019034 A1 20020307, 121 pp.  
DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR,  
BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK,  
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,  
PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,  
UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE,  
BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE,  
IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese).  
CODEN: PIXXD2. APPLICATION: WO 2001-JP7275 20010824. PRIORITY: JP  
2000-258524 20000829; JP 2000-265483 20000901; JP 2000-324508  
20001024; JP 2000-345764 20001113; JP 2000-360075 20001127; JP  
2001-18765 20010126.
- AB A compn., which has a refractive index sensitively changeable by a  
radiation, comprises (A) a decomposable compd., (B) a  
non-decomposable compd. having a refractive index lower than that of  
the decomposable compd. (A), (C) a radiation-sensitive decomp.  
agent, and (D) a stabilizer. The irradiation of the compn. with a  
radiation ray via a mask decomposes the above (C) and (A) components  
in an irradiated portion, resulting in the occurrence of the  
difference in refractive index between an irradiated portion and a  
non-irradiated portion, which leads to the formation of a pattern  
having regions of different refractive indexes. The method provides  
the pattern of a large diffraction index difference in a simple  
method and provides the stable pattern. The compns. suitable for  
use in production of optical devices such as optical fiber, optical lens.
- IC ICM G03F007-004  
ICS G03F007-36; C08L083-14; C08L101-00; G02B003-00; G02B005-18;  
G02B006-12; G03H001-02
- CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)
- IT Polysiloxanes, preparation  
**Silsesquioxanes**  
(non-decomposable component in compn.)
- IT 9002-81-7P, Polyoxymethylene 25750-62-3P, o-Phthalaldehyde  
homopolymer 119652-66-3P, 4-Chloro-phthalaldehyde homopolymer  
119806-22-3P 402739-87-1P, o-Phthalaldehyde-benzaldehyde copolymer

402739-88-2P, 1,4-Benzenedithiol-1,4-Bis(2-nitrovinyl)benzene copolymer 402739-89-3P, Terephthalic acid chloride-1,4-Benzenedithiol copolymer 402739-90-6P, 1,4-Benzenedithiol-p-Phenylene diisocyanate copolymer 402739-92-8P, 1,4-Benzenedithiol-4-nitro-1,3-phenylene dichloroformate copolymer 402739-93-9P, Terephthalic acid-phenylmethyldichlorosilane copolymer 402739-94-0P, Benzaldehyde, dimethyl ~~acetal~~ -Methoxyhydroquinone copolymer 402739-96-2P, Terephthalic acid chloride-1,4-Benzenedithiol copolymer, sru 402739-97-3P, 1,4-Benzenedithiol-p-Phenylene diisocyanate copolymer, sru 402745-46-4P, o-Phthalaldehyde-Glutaraldehyde copolymer 402859-28-3P

(compn. having refractive index sensitively changeable by radiation and method for forming refractive index pattern of gradient of refraction index (GRIN))

IT 25498-03-7P, Methyltrimethoxysilane homopolymer 153315-80-1P 159873-52-6P, Tetramethoxysilane-methyltrimethoxysilane copolymer 178376-40-4P, Ethyl vinyl ether-Hydroxybutyl vinyl ether-Hexafluoropropylene copolymer 402739-95-1P (non-decomposable component in compn.)

L69 ANSWER 10 OF 21 HCA COPYRIGHT 2006 ACS on STN

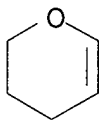
135:242560 Synthesis of phenol-group-containing polycarbosiloxanes by hydrosilylation. Matsukawa, Kimihiro; Inoue, Hiroshi (Osaka Munic. Tech. Res. Inst., 1-6-50 Morinomiya, Joto-ku, Osaka, 536-8553, Japan). Kagaku to Kogyo (Osaka), 75(3), 109-116 (Japanese) 2001. CODEN: KKGOAG. ISSN: 0368-5918. Publisher: Osaka Koken Kyokai.

AB Hydrosilylation, which is catalyzed by a platinum complex, is an useful reaction in carbon-silicon bond formation for the generation of various silicon related compds. and polymers. It is much interested that polycarbosiloxanes are synthesized by hydrosilylation polymn. of divinyl compds. with bis-hydrosiloxanes. In this work, prepn. of polycarbosiloxanes with phenol groups in **side chains** via hydrosilylation was investigated. Siloxane oligomers contg. two allyl groups and one protected hydroxyphenyl group are reacted with .alpha.,.omega.-bis-hydrosiloxanes by use of Karstedt catalyst, which is a Pt-divinyltetramethyldisiloxane. Finally, the phenol-contg. polycarbosiloxanes are produced by elimination of tetrahydropyranyl ether as the protective group.

IT 110-87-2, 3,4-Dihydro-2H-pyran (in monomer prepn.; for synthesis of phenol-group-contg. polycarbosiloxanes by hydrosilylation)

RN 110-87-2 HCA

CN 2H-Pyran, 3,4-dihydro- (8CI, 9CI) (CA INDEX NAME)

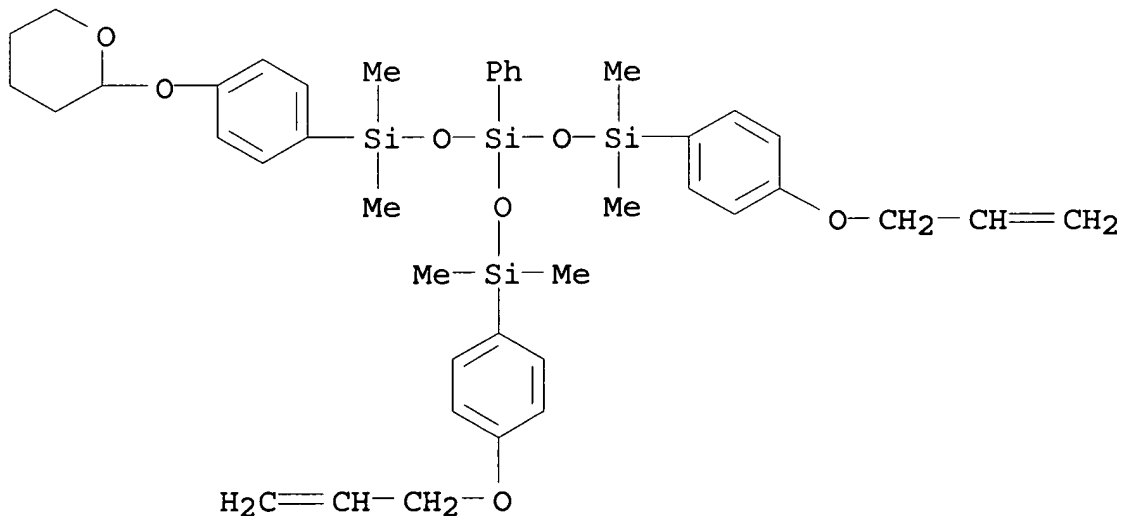


IT 361176-97-8DP, deetherified 361176-98-9DP,  
deetherified  
(synthesis of phenol-group-contg. polycarbosiloxanes by  
hydrosilylation)  
RN 361176-97-8 HCA  
CN Trisiloxane, 3-[[dimethyl[4-(2-propenyloxy)phenyl]silyl]oxy]-1,1,5,5-  
tetramethyl-3-phenyl-1-[4-(2-propenyloxy)phenyl]-5-[4-[(tetrahydro-  
2H-pyran-2-yl)oxy]phenyl]-, polymer with .alpha.-(dimethylsilyl)-  
.omega.-[(dimethylsilyl)oxy]poly[oxy(dimethylsilylene)] (9CI) (CA  
INDEX NAME)

CM 1

CRN 361176-96-7

CMF C41 H54 O7 Si4

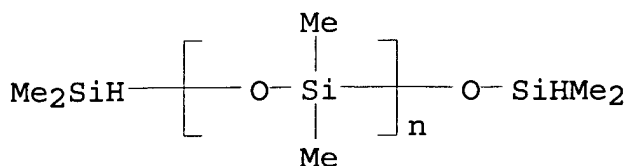


CM 2

CRN 115254-29-0

CMF (C2 H6 O Si)<sub>n</sub> C4 H14 O Si2

CCI PMS



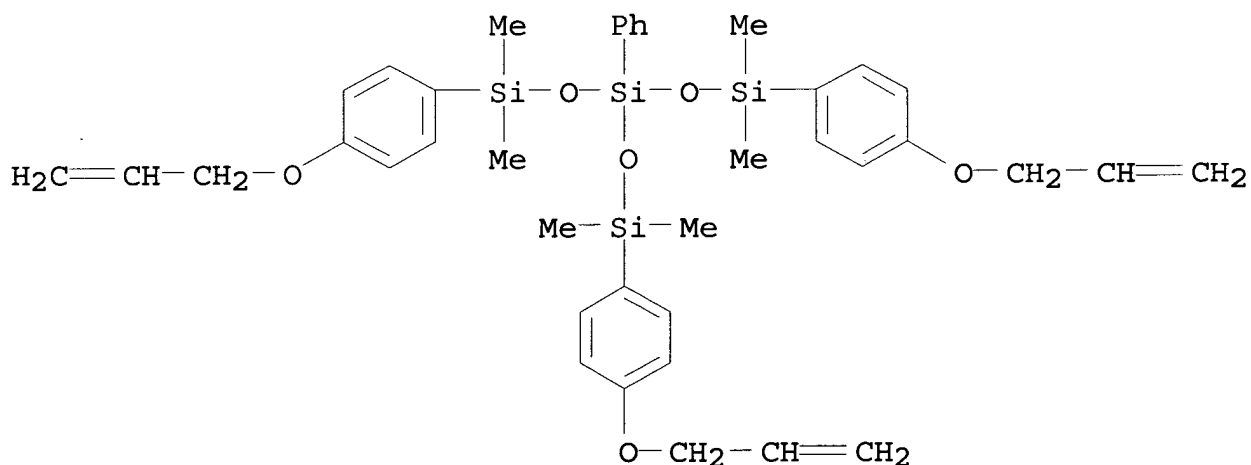
RN 361176-98-9 HCA

CN Trisiloxane, 3-[[dimethyl[4-(2-propenyloxy)phenyl]silyl]oxy]-1,1,5,5-tetramethyl-3-phenyl-1,5-bis[4-(2-propenyloxy)phenyl]-, polymer with .alpha.-(dimethylsilyl)-.omega.-[(dimethylsilyl)oxy]poly[oxy(dimethylsilylene)] (9CI) (CA INDEX NAME)

CM 1

CRN 138914-03-1

CMF C39 H50 O6 Si4

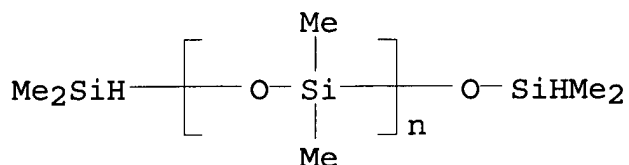


CM 2

CRN 115254-29-0

CMF (C2 H6 O Si)<sub>n</sub> C4 H14 O Si2

CCI PMS



IT 361176-95-6P

(synthesis of polycarbosiloxanes by hydrosilylation)

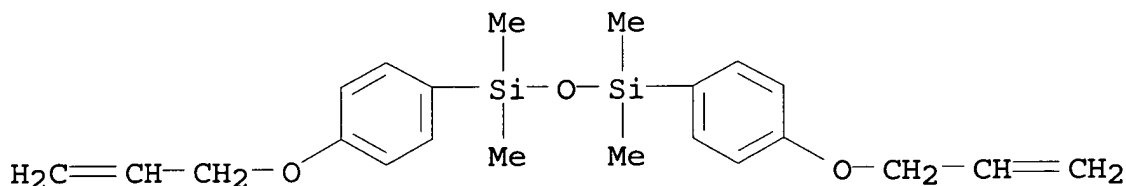
RN 361176-95-6 HCA

CN Disiloxane, 1,1,3,3-tetramethyl-1,3-bis[4-(2-propenyloxy)phenyl]-, polymer with .alpha.-(dimethylsilyl)-.omega.-[(dimethylsilyl)oxy]poly[oxy(dimethylsilylene)] (9CI) (CA INDEX NAME)

CM 1

CRN 140899-24-7

CMF C22 H30 O3 Si2

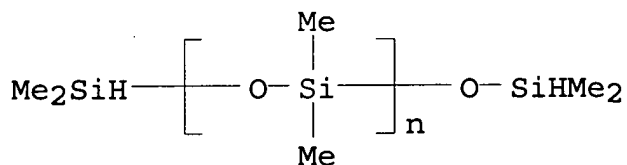


CM 2

CRN 115254-29-0

CMF (C2 H6 O Si)<sub>n</sub> C4 H14 O Si2

CCI PMS



CC 35-4 (Chemistry of Synthetic High Polymers)

IT 75-78-5, Dimethyldichlorosilane 98-13-5, Phenyltrichlorosilane

106-41-2, p-Bromophenol 110-87-2, 3,4-Dihydro-2H-pyran

140899-25-8, p-Allyloxyphenyldimethylsilanol

(in monomer prepn.; for synthesis of phenol-group-contg. polycarbosiloxanes by hydrosilylation)

IT 361176-97-8DP, deetherified 361176-98-9DP, deetherified

(synthesis of phenol-group-contg. polycarbosiloxanes by hydrosilylation)

IT 361176-95-6P

(synthesis of polycarbosiloxanes by hydrosilylation)

L69 ANSWER 11 OF 21 HCA COPYRIGHT 2006 ACS on STN

135:20627 Easy-release anisotropic electrically conductive adhesive film sandwiched between two release films generating no static electricity. Ito, Hiroshi; Kawada, Masakazu (Sumitomo Bakelite Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001152105 A2 20010605, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-331167 19991122.

AB In title trilayer film, the adhesive-facing side of one release film (base film) is coated with cured product of melamine resin with alkyd resin having polysilicone or polyolefin **side chains**, and the adhesive-facing side of the other release film (cover film) is coated with fluoroalkylsilane, wherein at least one of the release film shows antistatic properties. Thus, an adhesive compn. contg. bisphenol A epoxy resin, 2-methylimidazole, polyvinyl **acetal**, Ni- and Au-coated polystyrene particles was sandwiched between an antistatic base film coated with cured product of melamine resin with di-Me siloxane-modified alkyd resin, and an antistatic cover film coated with cured product of vinyl group-contg. fluorosiloxane with H-contg. fluorosiloxane. The adhesive compn. was easily released from the release films and showed adhesive strength 800 g/cm.

IT 240432-28-4DP, vinyl-terminated, polymers with hydrogen fluorosiloxane 240432-31-9DP, polymers with vinyl group-contg. fluorosiloxane (easy-release antistatic anisotropic elec. conductive adhesive films)

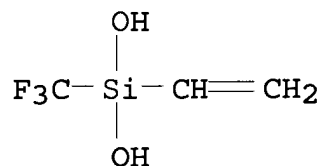
RN 240432-28-4 HCA

CN Silanediol, bis(trifluoromethyl)-, polymer with ethenyl(trifluoromethyl)silanediol (9CI) (CA INDEX NAME)

CM 1

CRN 240432-27-3

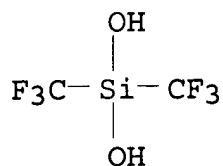
CMF C3 H5 F3 O2 Si



CM 2

CRN 195536-31-3

CMF C2 H2 F6 O2 Si



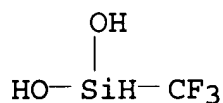
RN 240432-31-9 HCA

CN Silanediol, bis(trifluoromethyl)-, polymer with  
(trifluoromethyl)silanediol (9CI) (CA INDEX NAME)

CM 1

CRN 240432-30-8

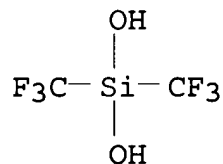
CMF C H3 F3 O2 Si



CM 2

CRN 195536-31-3

CMF C2 H2 F6 O2 Si



IC ICM C09J007-02

ICS C09K003-16

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 76

IT Epoxy resins, uses

Polyvinyl **acetals**

(easy-release antistatic anisotropic elec. conductive adhesive films)

IT 9003-08-1DP, melamine resin, polymers with siloxane-alkyd resins

**240432-28-4DP**, vinyl-terminated, polymers with hydrogen

fluorosiloxane **240432-31-9DP**, polymers with vinyl

group-contg. fluorosiloxane

(easy-release antistatic anisotropic elec. conductive adhesive

films)

L69 ANSWER 12 OF 21 HCA COPYRIGHT 2006 ACS on STN

134:335430 Method for detecting an end point for an oxygen free plasma process. Han, Quigyan; Sakthivel, Palani; Ruffin, Ricky; Cardoso, Andre Gil (Axcelis Technologies, Inc., USA). Eur. Pat. Appl. EP 1098189 A2 **20010509**, 19 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-309763 20001103. PRIORITY: US 1999-434617 19991105.

AB A method for detg. an endpoint for an O free plasma stripping process for use in semiconductor wafer processing. The method comprises exciting a gas compn. contg. a N gas and a reactive gas to form the O free plasma. The O free plasma reacts with a substrate 88 having a photoresist and/or residues thereon to produce emitted light signals corresponding to an O free reaction product. The endpoint is detd. by optically measuring a primary emission signal of the O free reaction product at a wavelength of .apprx.387nm. The endpoint is detd. when the plasma no longer reacts with the photoresist and/or residues on the substrate to produce the emitted light at .apprx.387nm, an indication that the photoresist and/or residues have been removed from the wafer. Secondary emission signals of the O free reaction product at .apprx.358nm and 431 nm can also be monitored for detg. the endpoint.

IC ICM G01N021-68

ICS H01J037-32

CC 76-11 (Electric Phenomena)

Section cross-reference(s): 47

IT Hydrocarbons, uses

(fluoro, oxygen free plasma gases; detecting end point by optical emission for oxygen free plasma ashing of photoresist and post-etching residues)

IT **Silsesquioxanes**

(hydrogen, dielec. films; detecting end point by optical emission for oxygen free plasma ashing of photoresist and post-etching residues)

IT **Acetals**

**Ketals**

(plasma ashing; detecting end point by optical emission for oxygen free plasma ashing of photoresist and post-etching residues)

IT 7664-39-3P, Hydrogen **fluoride**, preparation

(detecting end point by optical emission for oxygen free plasma ashing of photoresist and post-etching residues)

IT 74-82-8, Methane, uses 74-84-0, Ethane, uses 74-98-6, Propane, uses 75-46-7, **Fluoroform** 75-73-0,

**Tetrafluoromethane** 1333-74-0, Hydrogen, uses 2551-62-4,

Sulfur **fluoride** (SF6) 7440-01-9, Neon, uses 7440-37-1,

Argon, uses 7440-59-7, Helium, uses 7664-41-7, Ammonia, uses 7727-37-9, Nitrogen, uses 7782-41-4, **Fluorine**, uses 7783-54-2, Nitrogen **trifluoride**  
(oxygen free plasma gases; detecting end point by optical emission for oxygen free plasma ashing of photoresist and post-etching residues)

L69 ANSWER 13 OF 21 HCA COPYRIGHT 2006 ACS on STN

132:130997 Manufacture of metal wiring by dual damascene process using photosensitive polymer. Sin, Ko-Jae; Kim, Byung-Jun (Samsung Electronics Co., Ltd., S. Korea). Jpn. Kokai Tokkyo Koho JP 2000040741 A2 **20000208**, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-330935 19981120. PRIORITY: KR 1998-27664 19980709.

AB The method involves the following processes: (1) forming an interlayer insulating film on a substrate via an elec. conductive layer, (2) forming a width-controlled photosensitive polymer pattern with an opening, (3) forming an interlayer insulating films on the whole surface, (4) forming an etching mask pattern with wider width than the insulating film and an opening, (5) dry etching the latter insulating film using the pattern as an etching mask to form a wiring region, and (6) dry etching the prior insulating film using the photosensitive polymer pattern as an etching mask to form a via hole region. Another method involves the following steps: (1) forming an interlayer insulating film on a semiconductor substrate via an elec. conductive layer, (2) forming an etching prevention layer on the insulating film, (3) forming another interlayer insulating film on the etching prevention layer, (4) forming a photosensitive polymer pattern with a controlled width and an opening on the latter insulating layer, (5) forming a photoresist pattern with a narrower width than the polymer pattern with an opening on the latter insulating layer, (6) successively dry etching the latter interlayer insulating film and the etching prevention layer to form an opening with the same size as that on the photoresist pattern to expose the prior insulating film, (7) removing the photoresist pattern, and (8) dry etching the latter and prior interlayer insulating films to simultaneously form a wiring region and a via hole region. Multilayer metal wiring obtained by the method in shorter steps shows less capacitance between each wiring layer.

IC ICM H01L021-768

ICS G03F007-027; H01L021-3065

CC 76-14 (Electric Phenomena)

IT Hydrocarbons, processes

(**fluoro**, interlayer insulator; manuf. of multilayer metal wiring board by dual damascene process using photosensitive polymer)

IT **Silsesquioxanes**

(hydrogen, interlayer insulator; manuf. of multilayer metal wiring board by dual damascene process using photosensitive polymer)

IT Polycarbonates, processes  
Polyimides, processes  
Polyolefins  
Polyvinyl **acetals**

(photosensitive polymer; manuf. of multilayer metal wiring board by dual damascene process using photosensitive polymer)

L69 ANSWER 14 OF 21 HCA COPYRIGHT 2006 ACS on STN

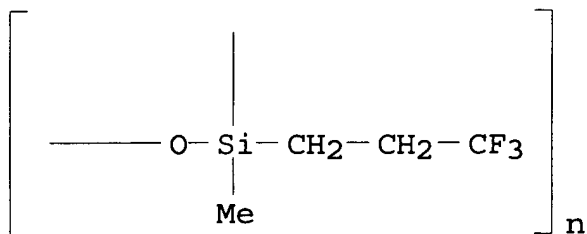
130:141341 Sorbent coatings for nitroaromatic vapors: applications with chemical sensors. McGill, R. Andrew; Mlsna, Todd E.; Chung, Russell; Nguyen, Viet K.; Stepnowski, Jennifer; Abraham, Michael H.; Kobrin, Paul (Naval Research Laboratory, Code 6670, Washington, DC, 20375, USA). Proceedings of SPIE-The International Society for Optical Engineering, 3392(Pt. 1, Detection and Remediation Technologies for Mines and Minelike Targets III), 384-389 (English) 1998. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB The soly. properties of a series of nitroarom. compds. were detd. and used with known linear solvation energy relationships to calc. their sorption properties in a series of chemoselective polymers. These measurements and results were used to design a series of novel chemoselective polymers to target polynitroarom. compds. The polymers were then evaluated as thin sorbent coatings on surface acoustic wave (SAW) devices for their vapor sorption and selectivity properties. The most promising materials tested, include siloxane polymers functionalized with acidic **pendant** groups that are complimentary in their soly. properties for nitroarom. compds. The most sensitive of the new polymers exhibited SAW sensor detection limits for nitrobenzene and 2,4-dinitrotoluene at 3 ppb and 235 parts per trillion resp. Optimized polymers exhibited low water vapor sorption, and rapid signal kinetics for nitrobenzene, reaching 90% of signal response in 4 s. Studies with an in-situ infra-red spectroscopy technique were used to det. a hydrogen-bonding-type mechanism of interaction between nitroarom. compds. and the chemoselective polymer.

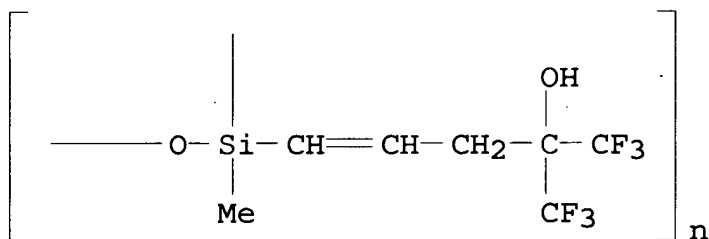
IT 25791-89-3, OV-202 164662-83-3, Sxfa  
(chemoselective coating; linear solvation energy relationship in surface acoustic wave-type gas sensors for nitroarom. explosives)

RN 25791-89-3 HCA

CN Poly[oxy[methyl(3,3,3-trifluoropropyl)silylene]] (8CI, 9CI) (CA INDEX NAME)

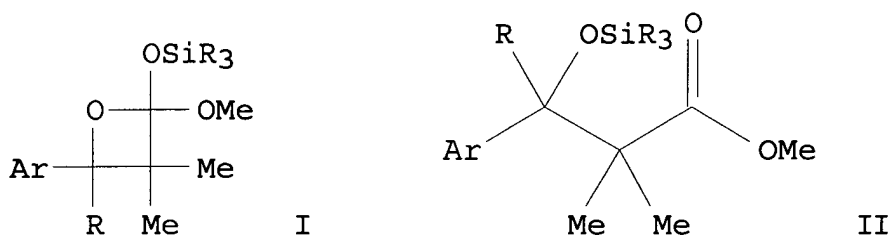


RN 164662-83-3 HCA  
 CN Poly[oxy[methyl[5,5,5-trifluoro-4-hydroxy-4-(trifluoromethyl)-1-pentenyl]silylene]] (9CI) (CA INDEX NAME)



CC 50-2 (Propellants and Explosives)  
 Section cross-reference(s): 80  
 IT Epoxy resins, uses  
 Polyvinyl **acetals**  
 (chemoselective coating; linear solvation energy relationship in surface acoustic wave-type gas sensors for nitroarom. explosives)  
 IT 9003-27-4, Polyisobutylene 9003-32-1, Poly(ethyl acrylate)  
 24969-06-0, Polyepichlorohydrin **25791-89-3**, OV-202  
 26316-53-0, Ethylene glycol-maleic acid copolymer 116352-29-5,  
 Benzenemethanol, 4-ethenyl-..alpha...alpha..bis(trifluoromethyl)-  
 , homopolymer **164662-83-3**, Sxfa 213175-64-5  
 (chemoselective coating; linear solvation energy relationship in surface acoustic wave-type gas sensors for nitroarom. explosives)  
 L69 ANSWER 15 OF 21 HCA COPYRIGHT 2006 ACS on STN  
 130:52280 Regioselective formation of 2-alkoxyoxetanes in the photoreaction of aromatic carbonyl compounds with .beta...beta.-dimethyl ketene silyl **acetals**: notable solvent and silyl group effects. Abe, Manabu; Shiroadai, Yasuo; Nojima, Masatomo (Faculty of Engineering, Department of Materials Chemistry, Osaka University, Osaka, 565-0871, Japan). Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (19), 3253-3260 (English) **1998**. CODEN: JCPRB4. ISSN: 0300-922X. OTHER SOURCES: CASREACT 130:52280. Publisher: Royal Society of Chemistry.

GI



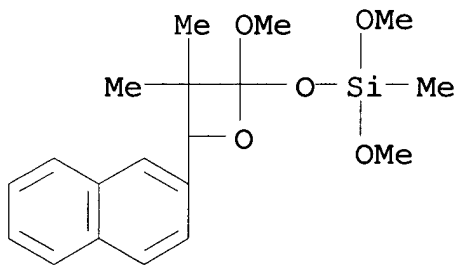
AB Regioselective formation of 2-alkoxyoxetanes I [Ar = 2-naphthyl, 4-NCC<sub>6</sub>H<sub>4</sub>, 4-MeOC<sub>6</sub>H<sub>4</sub>, Ph; R = H, Me, Ph; SiR<sub>3</sub> = Me<sub>3</sub>Si, Et<sub>3</sub>Si, Me<sub>3</sub>CSiMe<sub>2</sub>, (MeO)<sub>2</sub>SiMe] was achieved by photoaddn. of arom. ketones Ar-CO-R with electron-rich ketene silyl **acetals** Me<sub>2</sub>C:C(OMe)OSiR<sub>3</sub>. In the photo reactions, the silyl-migration adduct II was also formed together with the oxetane I. The product ratios of I and II were largely dependent on the solvent used and the silyl group of the ketene silyl **acetals**. The exclusive formation of I was controlled by proper choice of the solvent and silyl group.

IT 217083-51-7P 217083-52-8P

(solvent and substituent effects in the regioselective prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl **acetals**)

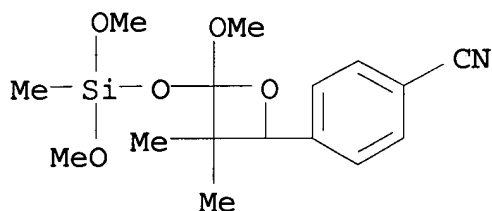
RN 217083-51-7 HCA

CN Silane, dimethoxy[[2-methoxy-3,3-dimethyl-4-(2-naphthalenyl)-2-oxetanyl]oxy]methyl- (9CI) (CA INDEX NAME)



RN 217083-52-8 HCA

CN Benzonitrile, 4-[4-[(dimethoxymethylsilyl)oxy]-4-methoxy-3,3-dimethyl-2-oxetanyl]- (9CI) (CA INDEX NAME)



- CC 27-5 (Heterocyclic Compounds (One Hetero Atom))  
Section cross-reference(s): 22
- ST oxetane alkoxyloxy prepn regiochem; alkoxyoxetanes prepn regiochem; arom carbonyl compd photochem cycloaddn regiochem; regiochem photochem cycloaddn dimethylketene silyl **acetal**
- IT Carbonyl compounds (organic), reactions  
(arom.; solvent and substituent effects in the regioselective prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl **acetals**)
- IT Cycloaddition reaction  
(photocycloaddn.; solvent and substituent effects in the regioselective prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl **acetals**)
- IT **Acetals**  
(silyl; solvent and substituent effects in the regioselective prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl **acetals**)
- IT Regiochemistry  
Solvent effect  
Substituent effects  
(solvent and substituent effects in the regioselective prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl **acetals**)
- IT 35022-33-4P 61841-05-2P 86426-00-8P 92157-35-2P 175732-03-3P  
182221-96-1P 217083-62-0P 217083-63-1P 217083-64-2P  
(hydrolysis side product in prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl **acetals**)
- IT 217083-65-3P 217083-66-4P  
(pinacol side product in prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl **acetals**)
- IT 195829-35-7P 217083-67-5P  
(redn. side product in prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl **acetals**)
- IT 92233-94-8P 151721-69-6P 156541-03-6P 217083-54-0P  
217083-56-2P 217083-57-3P 217083-58-4P 217083-59-5P  
217083-60-8P 217083-61-9P

(silane migration side product in prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl acetals)

IT 66-99-9, 2-Naphthalenecarboxaldehyde 98-86-2, Acetophenone, reactions 100-52-7, Benzaldehyde, reactions 105-07-7, 4-Cyanobenzaldehyde 119-61-9, Benzophenone, reactions 123-11-5, 4-Methoxybenzaldehyde, reactions 1443-80-7, 4'-Cyanoacetophenone 1503-49-7, 4-Cyanobenzophenone 6136-68-1, 3'-Cyanoacetophenone 31469-15-5 55453-17-3 89337-62-2

(solvent and substituent effects in the regioselective prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl acetals)

IT 114646-00-3P

(solvent and substituent effects in the regioselective prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl acetals)

IT 203730-72-7P 217083-38-0P 217083-39-1P 217083-40-4P  
217083-41-5P 217083-42-6P 217083-43-7P 217083-44-8P  
217083-45-9P 217083-46-0P 217083-47-1P 217083-49-3P  
217083-50-6P 217083-51-7P 217083-52-8P  
217083-53-9P

(solvent and substituent effects in the regioselective prepn. of alkoxyoxetanes by photochem. cycloaddn. arom. carbonyl compds. with di-Me ketene silyl acetals)

L69 ANSWER 16 OF 21 HCA COPYRIGHT 2006 ACS on STN

124:344441 Silicone-compatible photoinitiators for use in photosensitive compositions. Niesert, Claus-Peter; Pawlowski, Georg; Gries, Willi-Kurt; Przybilla, Klaus-Juergen (Hoechst A.-G., Germany). Eur. Pat. Appl. EP 705865 A1 19960410, 18 pp. DESIGNATED STATES: R: CH, DE, FR, GB, IT, LI, NL. (German). CODEN: EPXXDW. APPLICATION: EP 1995-115059 19950925. PRIORITY: DE 1994-4435487 19941004.

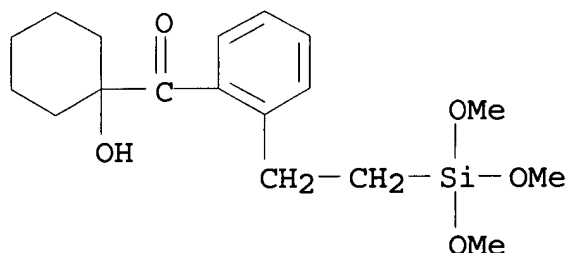
AB The title photoinitiators, useful in radical photopolymer., are silanes of specified structure bonded to conventional photoinitiators. (Ph<sub>3</sub>P)Ru(CO)H<sub>2</sub>-catalyzed hydrosilylation of 20 mmol benzoin Me ether with 35 mmol CH<sub>2</sub>:CHSi(OMe)<sub>3</sub> in refluxing PhMe gave 490 mg 2-[2-(trimethoxysilyl)ethyl]benzoin Me ether. Use of the initiators in the photochem. curing of siloxanes and printing plates is exemplified.

IT 176795-64-5P

(silicone-compatible photoinitiators for use in photosensitive compns.)

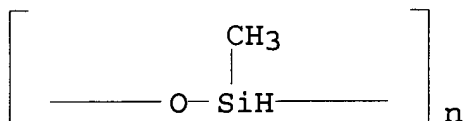
RN 176795-64-5 HCA

CN Methanone, (1-hydroxycyclohexyl) [2-[2-(trimethoxysilyl)ethyl]phenyl]-(9CI) (CA INDEX NAME)



- IC ICM C08G077-14  
ICS C07F007-18; C07F007-08; C08F002-50
- CC 35-3 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 29, 67, 74
- IT 492-22-8, Thioxanthone 574-09-4, Benzoin ethyl ether 947-19-3,  
1-Benzoylcyclohexanol 3524-62-7, Benzoin methyl ether 5495-84-1,  
2-Isopropylthioxanthone 6652-28-4 24650-42-8, Benzil dimethyl  
**ketal** 71868-10-5 119313-12-1  
(reaction with trialkoxyvinylsilanes)
- IT 119313-12-1DP, reaction products with vinyl siloxanes  
155665-02-4DP, Dimethylsilanediol-methylvinylsilanediol copolymer,  
reaction products with benzyl(dimethylamino)(morpholinophenyl)butano  
ne 176795-63-4P **176795-64-5P** 176795-65-6P  
176795-66-7P 176795-67-8P 176795-68-9P 176795-69-0P  
176795-70-3P 176795-71-4P 176795-72-5P 176795-73-6P  
176795-74-7P 176795-75-8P 176795-76-9P 176795-77-0P  
176795-78-1P  
(silicone-compatible photoinitiators for use in photosensitive  
compsns.)
- L69 ANSWER 17 OF 21 HCA COPYRIGHT 2006 ACS on STN  
121:58180 Photo-Cross-Linkable and Optically Active **Side-  
Chain** Liquid-Crystalline Copolymers. Chien, L.-C.; Cada,  
Leonora G. (Liquid Crystal Institute, Kent State University,  
Kent, OH, 44242, USA). Macromolecules, 27(14), 3721-6 (English)  
1994. CODEN: MAMOBX. ISSN: 0024-9297.
- AB Photocrosslinkable and optically active **side-chain**  
liq.-cryst. polymers were prep'd. from the hydrosilylation reactions  
of poly(methylhydrosiloxanes) with (S)-3-[2-(4'-cyano-4-  
biphenyloxy)-2-methylethoxy]propene and nematogenic  
4-methoxyphenyl 4-(5-hexenyloxy)cinnamate. The products exhibited  
chiral smectic C phases. Photocrosslinking these materials in their  
mesomorphic state enhanced the thermal stability of the mesophase.
- IT **9004-73-3DP**, Poly[oxy(methylsilylene)], hydrosilylation  
products with alkenyl ethers  
(prepn. and photocrosslinking of liq.-cryst. chiral)
- RN 9004-73-3 HCA

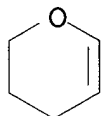
CN Poly[oxy(methylsilylene)] (8CI, 9CI) (CA INDEX NAME)



IT 110-87-2, Dihydropyran  
(reaction of, with Et lactate)

RN 110-87-2 HCA

CN 2H-Pyran, 3,4-dihydro- (8CI, 9CI) (CA INDEX NAME)



CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37, 75

IT 9004-73-3DP, Poly[oxy(methylsilylene)], hydrosilylation  
products with alkenyl ethers  
(prepn. and photocrosslinking of liq.-cryst. chiral)

IT 110-87-2, Dihydropyran  
(reaction of, with Et lactate)

L69 ANSWER 18 OF 21 HCA COPYRIGHT 2006 ACS on STN

119:228128 Chemically, weather- and scratch-resistant crosslinkable  
resin compositions for coatings. Iwamura, Goro; Yamamura, Kazuo;  
Oooka, Masataka; Takezawa, Shoichiro (Dainippon Ink & Chemicals,  
Japan). Jpn. Kokai Tokkyo Koho JP 05059289 A2 19930309  
Heisei, 20 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1991-218632 19910829.

AB The compns. comprise (A) vinyl polymers bearing protective  
**hemiacetal** ester and/or **hemiketal** ester groups,  
(B) compds. or polymers bearing both epoxy and hydrolyzable silyl  
groups, and optionally curing catalysts. A copolymer of Bu acrylate  
(I), Bu methacrylate (II), 1-(isobutoxy)ethyl methacrylate, and  
styrene as A component was crosslinked with a I-II-glycidyl  
methacrylate-(methacryloyloxypropyl)trimethoxysilane-styrene  
copolymer at wt. ratio 1000:360 to give a coating film with the  
desired properties.

IT 150958-27-3  
(coatings, chem., scratch- and weather-resistant)

RN 150958-27-3 HCA

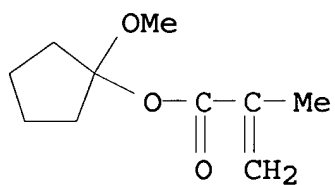
CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with butyl  
2-propenoate, ethenylbenzene, 1-methoxycyclopentyl

2-methyl-2-propenoate, oxiranylmethyl 2-methyl-2-propenoate and  
3-(trimethoxysilyl)propyl 2-methyl-2-propenoate (9CI) (CA INDEX  
NAME)

CM 1

CRN 143556-55-2

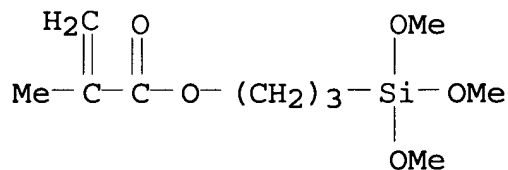
CMF C10 H16 O3



CM 2

CRN 2530-85-0

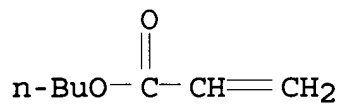
CMF C10 H20 O5 Si



CM 3

CRN 141-32-2

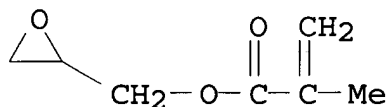
CMF C7 H12 O2



CM 4

CRN 106-91-2

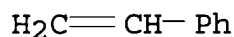
CMF C7 H10 O3



CM 5

CRN 100-42-5

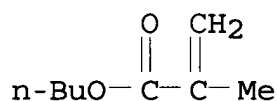
CMF C8 H8



CM 6

CRN 97-88-1

CMF C8 H14 O2



IC ICM C08L101-06

ICS C08K005-54; C08L101-10

CC 42-10 (Coatings, Inks, and Related Products)

ST scratch resistance coating **hemiacetal** acrylic ester; chem  
 resistance coating **hemiacetal** acrylic ester; weather  
 resistance coating **hemiacetal** acrylic ester;  
**hemiketal** acrylic ester polymer crosslinked coating; impact  
 resistance coating **hemiacetal** acrylic ester

IT Coating materials

(chem.- and scratch- and weather-resistant, crosslinkable acrylic  
 polymers bearing **hemiacetal** or **hemiketal**  
 ester groups for)

IT **Acetals**

(hemi-, esters, acrylic polymers contg., for tough coatings)

IT 150958-23-9 150958-24-0 150958-25-1 150958-26-2

150958-27-3 150958-28-4 150958-29-5 150958-30-8

(coatings, chem., scratch- and weather-resistant)

L69 ANSWER 19 OF 21 HCA COPYRIGHT 2006 ACS on STN

119:181356 Synthesis of functionalized **side-chain**

liquid crystal polymers: polyphenolic combs. Sastri, Satya B.;

Stupp, Samuel I. (Dep. Mater. Sci. Eng., Univ. Illinois, Urbana, IL,

61801, USA). Macromolecules, 26(21), 5657-63 (English) 1993

. CODEN: MAMOBX. ISSN: 0024-9297.

AB The synthesis of self-ordering comb polymers contg. functionalized **side chains** is reported. The target polymers have methacrylate backbones with hydroxy-functionalized **side chains** contg. terminal phenolic groups. The multistep synthesis of the target monomers is reported, and includes identifying suitable protecting groups for the phenolic monomers before free-radical polymn. The protecting groups explored include: dimethyl(1,1,2-trimethylpropyl)silyl, benzyl carbonate, Me<sub>3</sub>Si, Et<sub>3</sub>Si, MePh<sub>2</sub>Si, and tetrahydropyranyl. The MePh<sub>2</sub>Si and tetrahydropyranyl groups are most suitable and deprotection of the resulting polymers can be accomplished quant. under relatively mild conditions. One of the target polymers and its corresponding functionalized monomer melt into liq.-cryst. fluids which exhibit isotropization transitions at higher temps. The synthesis of these polymers is significant in the context that mesomorphic behavior is not considered common in org. mols. with functions that can form intermol. H bonds.

IT 150526-78-6D, hydrolyzed 150526-79-7D, hydrolyzed (liq.-cryst.)

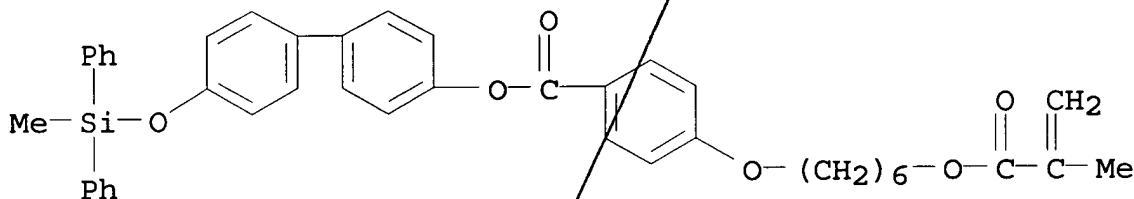
RN 150526-78-6 HCA

CN Benzoic acid, 4-[[6-[(2-methyl-1-oxo-2-propenyl)oxy]hexyl]oxy]-, 4'-[(methyldiphenylsilyl)oxy][1,1'-biphenyl]-4-yl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 150259-16-8

CMF C42 H42 O6 Si



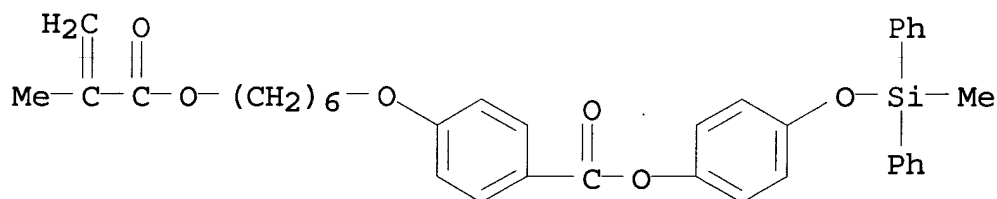
RN 150526-79-7 HCA

CN Benzoic acid, 4-[[6-[(2-methyl-1-oxo-2-propenyl)oxy]hexyl]oxy]-, 4'-[(methyldiphenylsilyl)oxy]phenyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 150259-17-9

CMF C36 H38 O6 Si



IT 150526-78-6P 150526-79-7P

(prepn. and deprotection of)

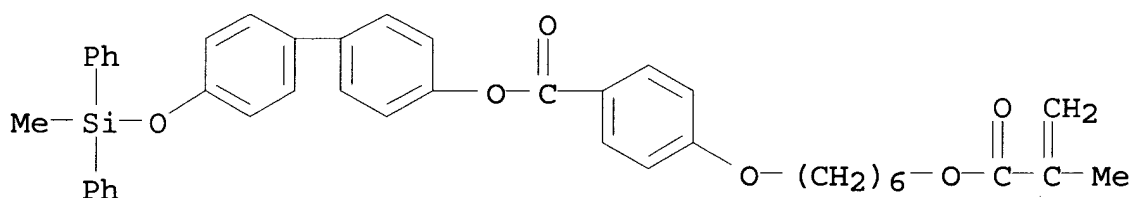
RN 150526-78-6 HCA

CN Benzoic acid, 4-[[6-[(2-methyl-1-oxo-2-propenyl)oxy]hexyl]oxy]-, 4'-[(methyldiphenylsilyl)oxy][1,1'-biphenyl]-4-yl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 150259-16-8

CMF C42 H42 O6 Si



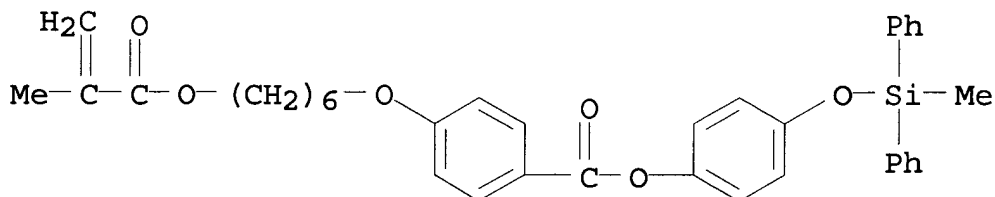
RN 150526-79-7 HCA

CN Benzoic acid, 4-[[6-[(2-methyl-1-oxo-2-propenyl)oxy]hexyl]oxy]-, 4'-[(methyldiphenylsilyl)oxy]phenyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 150259-17-9

CMF C36 H38 O6 Si



IT 150526-81-1P

(prepn. of)

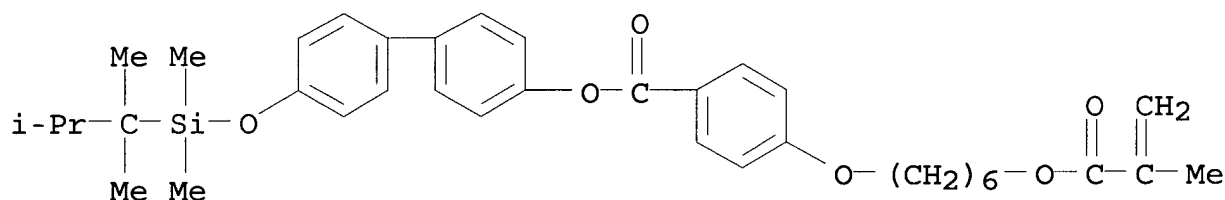
RN 150526-81-1 HCA

CN Benzoic acid, 4-[[6-[(2-methyl-1-oxo-2-propenyl)oxy]hexyl]oxy]-, 4'-[[dimethyl(1,1,2-trimethylpropyl)silyl]oxy][1,1'-biphenyl]-4-yl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 150259-12-4

CMF C37 H48 O6 Si

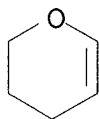


IT 110-87-2

(reaction of, with [[(methacryloyloxy)hexyl]oxy]biphenylol)

RN 110-87-2 HCA

CN 2H-Pyran, 3,4-dihydro- (8CI, 9CI) (CA INDEX NAME)



CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 75

ST liq cryst comb methacrylate polymer; **side chain**liq cryst polymer; phenolic **side chain**

polymethacrylate

IT 150526-78-6D, hydrolyzed 150526-79-7D, hydrolyzed

150526-80-0D, hydrolyzed

(liq.-cryst.)

IT 150526-78-6P 150526-79-7P 150526-80-0P

(prepn. and deprotection of)

IT 74206-92-1P 150259-15-7P 150259-19-1P 150259-20-4P

150259-21-5P 150259-22-6P 150259-23-7P 150259-24-8P

150526-81-1P 150526-82-2P 150526-83-3P

(prepn. of)

IT 110-87-2

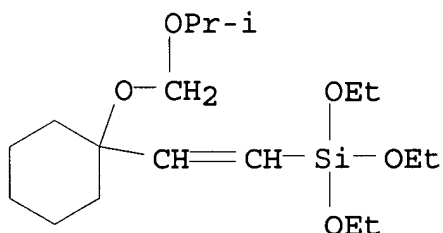
(reaction of, with [[(methacryloyloxy)hexyl]oxy]biphenylol)

L69 ANSWER 20 OF 21 HCA COPYRIGHT 2006 ACS on STN

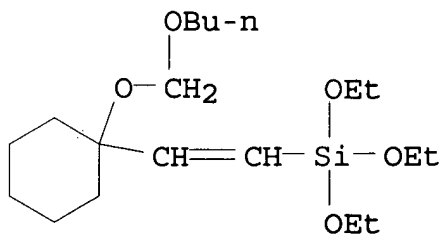
- 111:87524 Solid particle lubricant for slipping layer of dye-donor element used in thermal dye transfer. Henzel, Richard Paul; Vanier, Noel Rawle (Eastman Kodak Co., USA). Eur. Pat. Appl. EP 295483 A2 **19881221**, 13 pp. DESIGNATED STATES: R: BE, CH, DE, FR, GB, LI, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1988-108610 19880530. PRIORITY: US 1987-62797 19870616; US 1988-184316 19880421.
- AB A dye-donor element for thermal dye transfer comprises a support having on 1 side thereof a dye layer and on the other side a sliding layer comprising particles of a dry, solid lubricant, such as poly(**tetrafluoroethylene**), poly(**hexafluoropropylene**), or poly(**methylsilsesquioxane**), dispersed in a water-insol. binder. The use of the sliding layer prevents various printing defects and tearing of the donor element during the printing operation. A cyan donor element having a cyan dye layer on the front and a subbing layer and a sliding layer contg. Fluo-HT (micronized **polytetrafluoroethylene** powder) and cellulose nitrate binder on the back was used in a thermal recording device to show less force for passage of the thermal printing head.
- IC ICM B41M005-26
- CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT **Silsesquioxanes**  
(Me, thermal-transfer dye-donor element with sliding layer contg.)
- IT Vinyl **acetal** polymers  
(butyrals, thermal-transfer dye-donor elements with sliding layers contg. solid particle lubricant and)
- IT 9002-84-0 25120-07-4, Poly(**hexafluoropropylene**)  
122177-72-4, Emralon 329  
(thermal-transfer dye-donor element with sliding layer contg.)
- L69 ANSWER 21 OF 21 HCA COPYRIGHT 2006 ACS on STN
- 65:90742 Original Reference No. 65:16993d-f Acetylenic formals and their hydrosilation. Shikhiev, I. A.; Vatankha, A. A.; Gusein-Zade, B. M. (Inst. Petrochem. Processes, Baku). Zhurnal Obshchei Khimii, 36(7), 1293-5 (Russian) **1966**. CODEN: ZOKHA4. ISSN: 0044-460X.
- AB 1-Ethynylcyclohexanol and ClCH<sub>2</sub>OMe with NaOH under Et<sub>2</sub>O 10 hrs. at reflux gave 59.5% ethynylcyclohexyl methoxymethyl ether (I), b<sub>2</sub> 60-1.degree., d<sub>20</sub> 0.9984, n<sub>20D</sub> 1.4793; ethoxymethyl analog b<sub>1</sub> 64-5.degree., 0.9809, 1.4754; isopropoxymethyl analog b<sub>1</sub> 68-9.degree., 0.9646, 1.4724; propoxymethyl analog b<sub>2</sub> 75-7.degree., 0.9604, 1.4704; butoxymethyl analog b<sub>2</sub> 81-2.degree., 0.9377, 1.4686. I and (EtO)<sub>3</sub>SiH stirred 12 hrs. with H<sub>2</sub>PtCl<sub>6</sub> gave 34% 1-(triethoxysilylvinyl)cyclohexyl methoxymethyl ether, b<sub>2</sub> 88-9.degree., 1.0230, 1.4614; similarly were prepd. isopropoxymethyl analog, b<sub>3</sub> 109-10.degree., 0.9556, 1.4400; and butoxymethyl analog,

b2 114-15.degree., 0.9331, 1.4282, as well as 1-[.beta.-(dipropylmethylsilyl)vinyl]cyclohexyl methoxymethyl ether, b1 88-9.degree., 0.8956, 1.4590; 1-[.beta.-(diethylmethylsilyl)vinyl]cyclohexyl butoxymethyl ether, b3 98-9.degree., 0.8520, 1.4388.

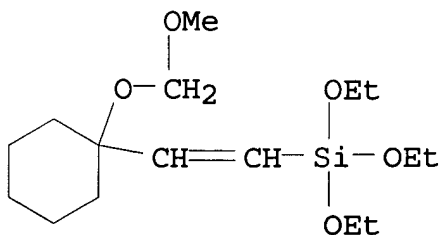
IT **7742-84-9**, Silane, triethoxy[2-[1-(isopropoxymethoxy)cyclohexyl]vinyl]- **7742-85-0**, Silane, [2-[1-(butoxymethoxy)cyclohexyl]vinyl]triethoxy- **10058-78-3**, Silane, triethoxy[2-[1-methoxymethoxy)cyclohexyl]vinyl]- (prepn. of)  
 RN 7742-84-9 HCA  
 CN Silane, triethoxy[2-[1-[(1-methylethoxy)methoxy]cyclohexyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 7742-85-0 HCA  
 CN Silane, [2-[1-(butoxymethoxy)cyclohexyl]vinyl]triethoxy- (7CI, 8CI) (CA INDEX NAME)



RN 10058-78-3 HCA  
 CN Silane, triethoxy[2-[1-(methoxymethoxy)cyclohexyl]ethenyl]- (9CI) (CA INDEX NAME)



CC 39 (Organometallic and Organometalloidal Compounds)  
IT **Acetals**  
(acetylenic formals, prepn. and hydrosilation of)  
IT **7742-84-9**, Silane, triethoxy[2-[1-(isopropoxymethoxy)cyclohexyl]vinyl]- **7742-85-0**, Silane, [2-[1-(butoxymethoxy)cyclohexyl]vinyl]triethoxy- **7742-86-1**, Silane, [2-[1-(methoxymethoxy)cyclohexyl]vinyl]methyldipropyl- **7742-87-2**, Silane, [2-[1-(butoxymethoxy)cyclohexyl]vinyl]diethylmethyl- **10058-78-3**, Silane, triethoxy[2-[1-methoxymethoxy)cyclohexyl]vinyl]-  
(prepn. of)

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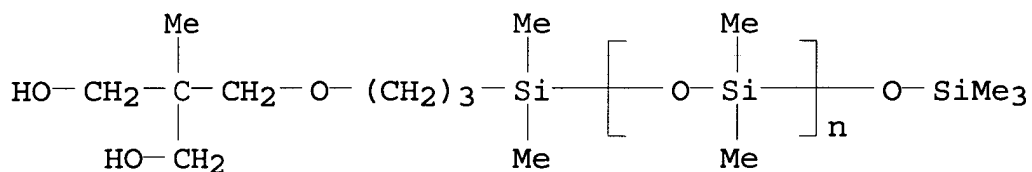
L70 ANSWER 1 OF 45 HCA COPYRIGHT 2006 ACS on STN  
143:106312 Electrophotographic carrier coated with graft copolymer, developer containing it, and image-forming method. Yamaguchi, Ishi; Iida, Yoshifumi; Yoshino, Shin (Fuji Xerox Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005181478 A2 20050707, 30 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-419035 20031217.

AB The carrier comprises a core material covered with a graft polymer having a polyurethane, polyester, or polyvinyl **acetal** structure in a main chain and a siloxane residue in a **side chain**. The developer contains a toner with shape factor .ltoreq.140 and the carrier. The method consists of forming a latent image on a photoreceptor, developing the latent image with the developer, transferring a toner image to an image receiving material, and fixing the toner image by heat. The carrier provides controlled pos. charging characteristics to a toner, showing improved resistance to environmental change.

IT **856864-75-0DP**, graft copolymers with vinyl **acetal** polymer and isocyanate **856864-76-1P 856864-78-3P 856864-80-7P 856864-81-8DP**, graft copolymers with vinyl **acetal** polymer and isocyanate **856864-82-9P 856864-83-0DP**, graft copolymers with vinyl **acetal** polymer and isocyanate **856864-84-1DP**, graft copolymers with vinyl **acetal** polymer and isocyanate **856864-85-2P 856864-86-3P 856864-87-4P 856864-88-5P 856864-89-6P**  
(electrophotog. carrier coated with graft copolymer)

RN 856864-75-0 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-[[3-[3-hydroxy-2-(hydroxymethyl)-2-methylpropoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]- (9CI) (CA INDEX NAME)



RN 856864-76-1 HCA

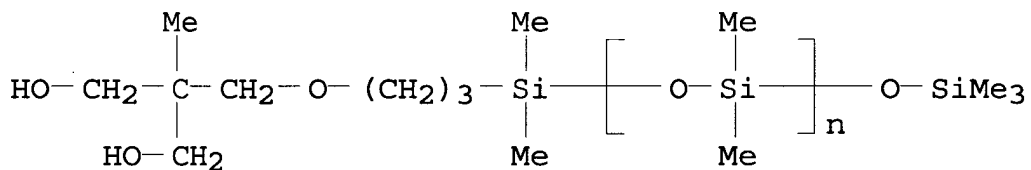
CN 1,4-Butanediol, polymer with .alpha.-[[3-[3-hydroxy-2-(hydroxymethyl)-2-methylpropoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]poly[oxy(dimethylsilylene)] and 1,1'-methylenebis[4-isocyanatocyclohexane], graft (9CI) (CA INDEX NAME)

CM 1

CRN 856864-75-0

CMF (C2 H6 O Si)<sub>n</sub> C13 H32 O4 Si2

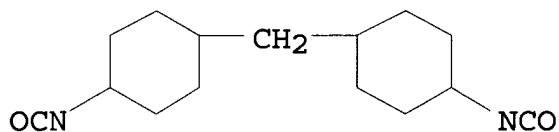
CCI PMS



CM 2

CRN 5124-30-1

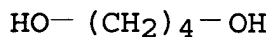
CMF C15 H22 N2 O2



CM 3

CRN 110-63-4

CMF C4 H10 O2

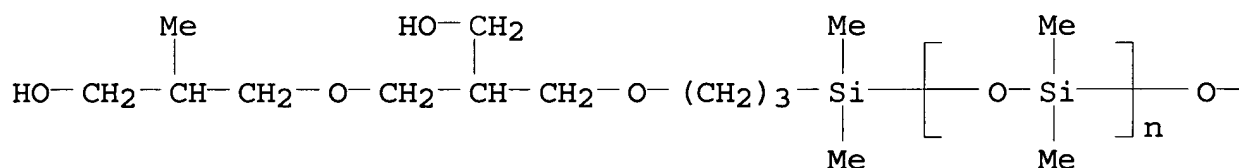


RN 856864-78-3 HCA  
 CN Hexanedioic acid, polymer with 1,4-butanediol, .alpha.-[[3-[3-hydroxy-2-[(3-hydroxy-2-methylpropoxy)methyl]propoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]poly[oxy(dimethylsilylene)] and 1,1'-methylenebis[4-isocyanatocyclohexane], graft (9CI) (CA INDEX NAME)

CM 1

CRN 856864-77-2  
 CMF (C2 H6 O Si)<sub>n</sub> C16 H38 O5 Si2  
 CCI PMS

PAGE 1-A

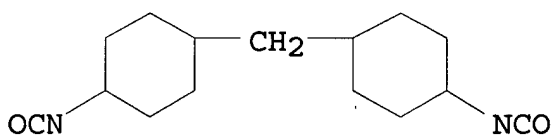


PAGE 1-B

—SiMe<sub>3</sub>

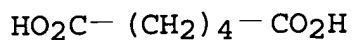
CM 2

CRN 5124-30-1  
 CMF C15 H22 N2 O2



CM 3

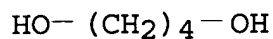
CRN 124-04-9  
 CMF C6 H10 O4



CM 4

CRN 110-63-4

CMF C4 H10 O2



RN 856864-80-7 HCA

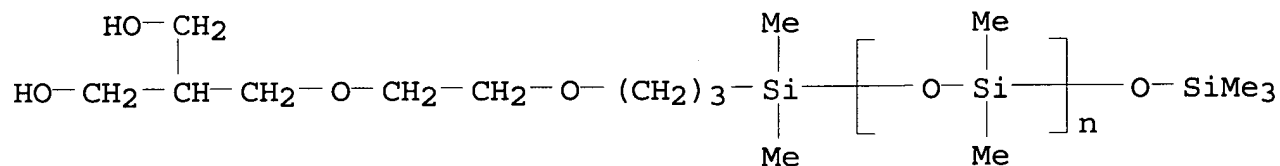
CN 1,4-Butanediol, polymer with .alpha.-[[3-[2-[3-hydroxy-2-(hydroxymethyl)propoxy]ethoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]poly[oxy(dimethylsilylene)] and 1,1'-methylenebis[4-isocyanatocyclohexane], graft (9CI) (CA INDEX NAME)

CM 1

CRN 856864-79-4

CMF (C2 H6 O Si)<sub>n</sub> C14 H34 O5 Si2

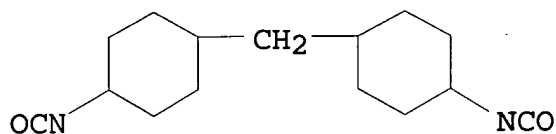
CCI PMS



CM 2

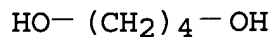
CRN 5124-30-1

CMF C15 H22 N2 O2

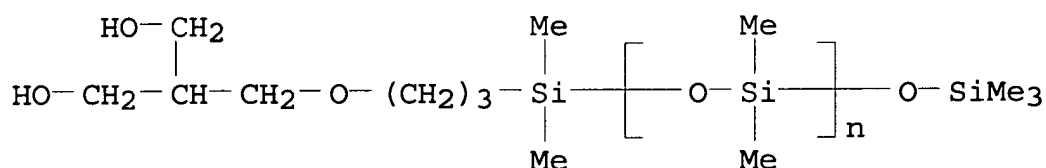


CM 3

CRN 110-63-4  
CMF C4 H10 O2



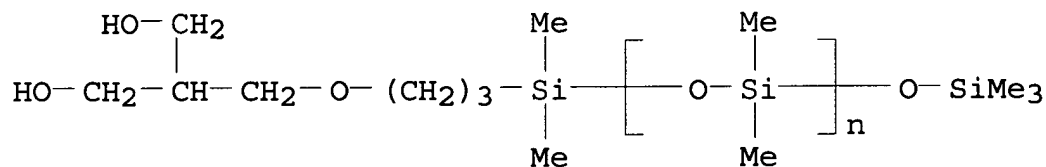
RN 856864-81-8 HCA  
CN Poly[oxy(dimethylsilylene)], .alpha.-[[3-[3-hydroxy-2-(hydroxymethyl)propoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]- (9CI) (CA INDEX NAME)



RN 856864-82-9 HCA  
CN Hexanedioic acid, polymer with 1,4-butanediol, .alpha.-[[3-[3-hydroxy-2-(hydroxymethyl)propoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]poly[oxy(dimethylsilylene)] and 1,1'-methylenebis[4-isocyanatocyclohexane], graft (9CI) (CA INDEX NAME)

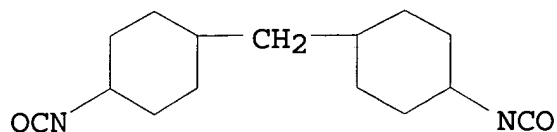
CM 1

CRN 856864-81-8  
CMF (C2 H6 O Si)<sub>n</sub> C12 H30 O4 Si2  
CCI PMS



CM 2

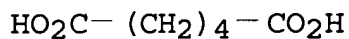
CRN 5124-30-1  
CMF C15 H22 N2 O2



CM 3

CRN 124-04-9

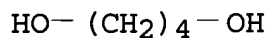
CMF C6 H10 O4



CM 4

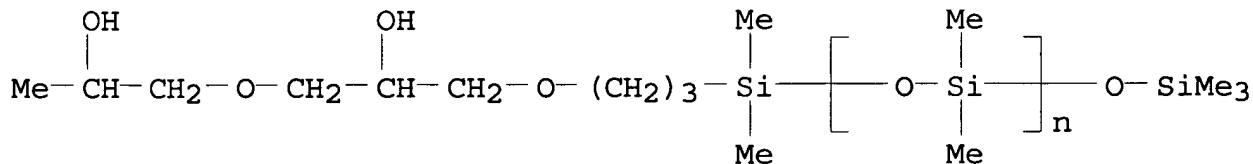
CRN 110-63-4

CMF C4 H10 O2



RN 856864-83-0 HCA

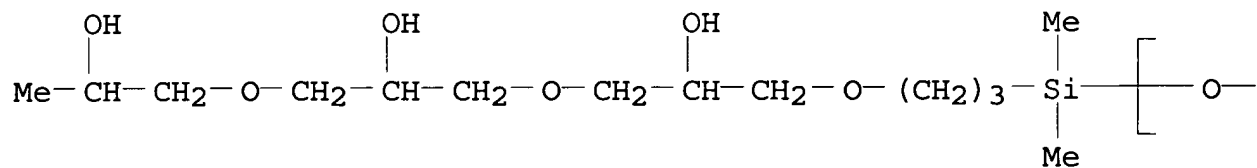
CN Poly[oxy(dimethylsilylene)], .alpha.-[[[2-hydroxy-3-(2-hydroxypropoxy)propoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]- (9CI) (CA INDEX NAME)



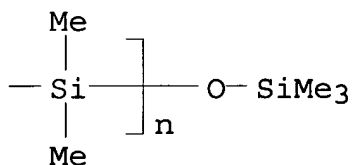
RN 856864-84-1 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-(7,11,15-trihydroxy-1,1-dimethyl-5,9,13-trioxa-1-silahexadecy-1-yl)-.omega.-[(trimethylsilyl)oxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RN 856864-85-2 HCA

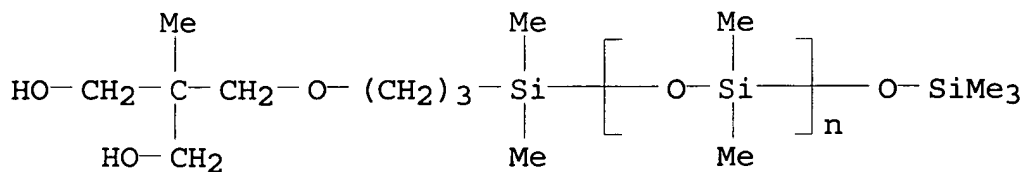
CN 2-Oxepanone, polymer with .alpha.-[[3-[3-hydroxy-2-(hydroxymethyl)-2-methylpropoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]poly[oxy(dimethylsilylene)], graft (9CI) (CA INDEX NAME)

CM 1

CRN 856864-75-0

CMF (C2 H6 O Si)<sub>n</sub> C13 H32 O4 Si2

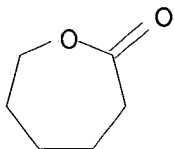
CCI PMS



CM 2

CRN 502-44-3

CMF C6 H10 O2



RN 856864-86-3 HCA

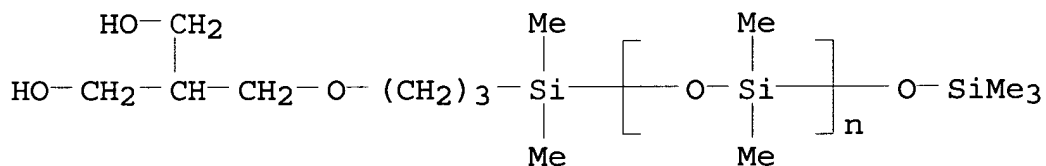
CN 2-Oxepanone, polymer with .alpha.-[[3-[3-hydroxy-2-(hydroxymethyl)propoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]poly[oxy(dimethylsilylene)], graft (9CI) (CA INDEX NAME)

CM 1

CRN 856864-81-8

CMF (C2 H6 O Si)<sub>n</sub> C12 H30 O4 Si2

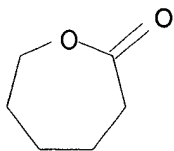
CCI PMS



CM 2

CRN 502-44-3

CMF C6 H10 O2

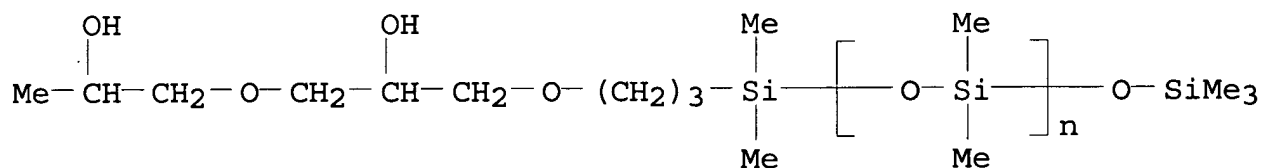


RN 856864-87-4 HCA

CN 2-Oxepanone, polymer with .alpha.-[[3-[2-hydroxy-3-(2-hydroxypropoxy)propoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]poly[oxy(dimethylsilylene)], graft (9CI) (CA INDEX NAME)

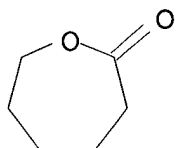
CM 1

CRN 856864-83-0  
 CMF (C2 H6 O Si)<sub>n</sub> C14 H34 O5 Si2  
 CCI PMS



CM 2

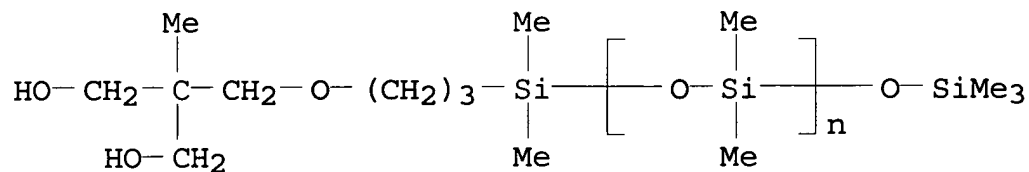
CRN 502-44-3  
 CMF C6 H10 O2



RN 856864-88-5 HCA  
 CN 2-Oxepanone, polymer with Coronate L and .alpha.-[[3-[3-hydroxy-2-(hydroxymethyl)-2-methylpropoxy]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]poly[oxy(dimethylsilylene)], graft (9CI) (CA INDEX NAME)

CM 1

CRN 856864-75-0  
 CMF (C2 H6 O Si)<sub>n</sub> C13 H32 O4 Si2  
 CCI PMS



CM 2

CRN 39278-79-0  
 CMF Unspecified

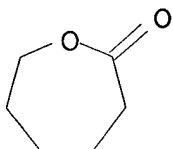
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3

CRN 502-44-3

CMF C6 H10 O2



RN 856864-89-6 HCA

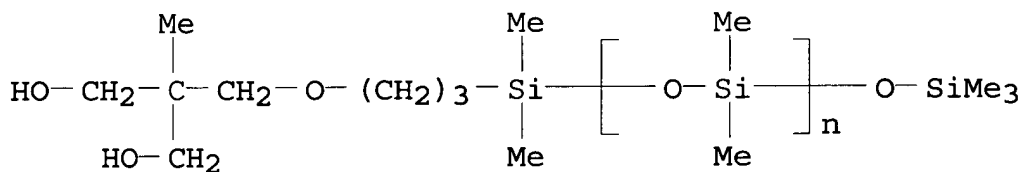
CN 2-Oxepanone, polymer with 1,3-diisocyanatomethylbenzene,  
 2-ethyl-2-(hydroxymethyl)-1,3-propanediol and .alpha.-[[3-[3-hydroxy-  
 2-(hydroxymethyl)-2-methylpropoxy]propyl]dimethylsilyl]-.omega.-  
 [(trimethylsilyl)oxy]poly[oxy(dimethylsilylene)], graft (9CI) (CA  
 INDEX NAME)

CM 1

CRN 856864-75-0

CMF (C2 H6 O Si)n C13 H32 O4 Si2

CCI PMS

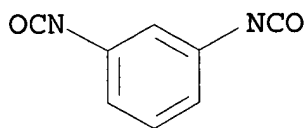


CM 2

CRN 26471-62-5

CMF C9 H6 N2 O2

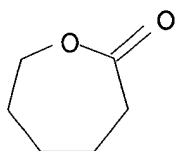
CCI IDS



D1-Me

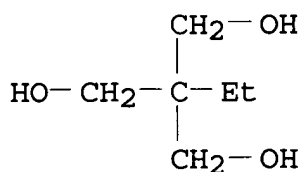
CM 3

CRN 502-44-3  
CMF C6 H10 O2



CM 4

CRN 77-99-6  
CMF C6 H14 O3



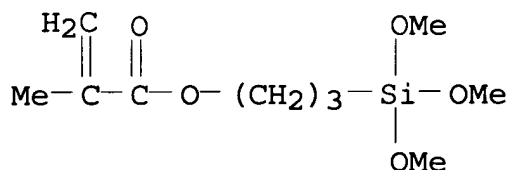
IC ICM G03G009-113  
ICS G03G009-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 38

ST electrophotog developer carrier resin coating; polysiloxane  
polyester polyurethane graft copolymer coating carrier; polyvinyl  
**acetal** polysiloxane coating electrophotog carrier

IT Polyvinyl **acetals**  
(acetoacetals, graft copolymers with polysiloxane and isocyanate;  
electrophotog. carrier coated with graft copolymer)

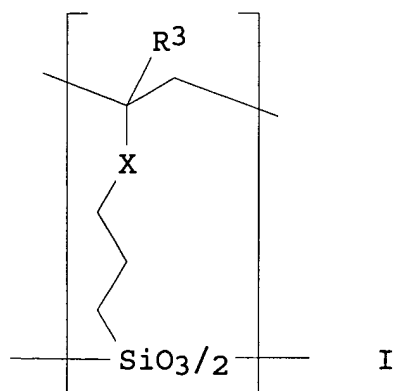
- IT Polyvinyl **acetals**  
(graft copolymers with polysiloxane; electrophotog. carrier coated with graft copolymer)
- IT 9017-09-8DP, graft copolymers with polysiloxane and polyvinyl butyral 104782-64-1DP, Takenate D 204EA, graft copolymers with polysiloxane and polyvinyl butyral 125936-67-6DP, Takenate D 103, graft copolymers with polysiloxane and polyvinyl butyral 200358-74-3DP, Takenate D 170, graft copolymers with polysiloxane and polyvinyl butyral **856864-75-0DP**, graft copolymers with vinyl **acetal** polymer and isocyanate **856864-76-1P** **856864-78-3P** **856864-80-7P** **856864-81-8DP**, graft copolymers with vinyl **acetal** polymer and isocyanate **856864-82-9P** **856864-83-0DP**, graft copolymers with vinyl **acetal** polymer and isocyanate **856864-84-1DP**, graft copolymers with vinyl **acetal** polymer and isocyanate **856864-85-2P** **856864-86-3P** **856864-87-4P** **856864-88-5P** **856864-89-6P**  
(electrophotog. carrier coated with graft copolymer)
- L70 ANSWER 2 OF 45 HCA COPYRIGHT 2006 ACS on STN  
143:79745 Waterborne curable coating compositions for forming gas-barrier layers on substrate and coated substrate. Matsuzawa, Hiroshi; Kudo, Shinichi; Takee, Hiroyuki (Dainippon Ink and Chemicals, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2005162892 A2 20050623, 19 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-404397 20031203.
- AB The compns. useful for plastic packaging films, containers, etc. are obtained from (A) the graft products of poly(vinyl alc.) type polymers bearing double bonds on **pendant** groups by (meth)acrylic monomers in aq. dispersion or soln. and (B) curing agents which can react with the OH groups of the graft products. Thus, modifying PVA-205 (polyvinyl alc.) with N-methylolacrylamide, and grafting with acrylonitrile and 2-hydroxyethyl methacrylate gave a graft copolymer which was combined with glyoxal in water contg. other additives to give a waterborne coating compn. for forming gas-barrier layer.
- IT **2530-85-0DP**, .gamma.-Methacryloxypropyltrimethoxysilane, reaction products with poly(vinyl alc.) compds., vinyl grafted and cured products  
(manuf. of waterborne curable coating compns. for forming gas-barrier layers on substrate and coated substrate)
- RN 2530-85-0 HCA  
CN 2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester (9CI)  
(CA INDEX NAME)



- IC ICM C08L051-00  
 ICS C08G018-63; C08K005-07; C08L061-20; C09D151-06; C09D175-04  
 CC 42-10 (Coatings, Inks, and Related Products)  
 ST glyoxal curing vinyl graft polyvinyl alc polymer barrier coating;  
 packaging film gas barrier coating **acetal** curable graft  
 copolymer  
 IT 79-10-7DP, Acrylic acid, graft products with unsatd. compd.-modified  
 poly(vinyl alc.) compds. 107-13-1DP, Acrylonitrile, graft products  
 with unsatd. compd.-modified poly(vinyl alc.) compds. 107-22-2DP,  
 Glyoxal, reaction products with unsatd. compd.-modified,  
 vinyl-grafted poly(vinyl alc.) compds. 868-77-9DP, 2-Hydroxyethyl  
 methacrylate, graft products with unsatd. compd.-modified poly(vinyl  
 alc.) compds. 924-42-5DP, N-Methylolacrylamide, reaction products  
 with poly(vinyl alc.) compds., vinyl grafted and cured products  
**2530-85-0DP**, .gamma.-Methacryloxypropyltrimethoxysilane,  
 reaction products with poly(vinyl alc.) compds., vinyl grafted and  
 cured products 9003-08-1DP, Watersol S 695, reaction products with  
 unsatd. compd.-modified, vinyl-grafted poly(vinyl alc.) compds.  
 122463-72-3DP, PVA-205, reaction products with unsatd. modifiers,  
 vinyl grafted and cured products 796883-38-0DP, Burnock DNW 5100,  
 reaction products with unsatd. compd.-modified, vinyl-grafted  
 poly(vinyl alc.) compds.  
 (manuf. of waterborne curable coating compns. for forming  
 gas-barrier layers on substrate and coated substrate)

L70 ANSWER 3 OF 45 HCA COPYRIGHT 2006 ACS on STN  
 143:16513 Silicon-containing polymers for chemically amplified resists,  
 and method for pattern formation. Hatakeyama, Jun; Nakajima, Atsuo  
 (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo  
 Koho JP 2005146131 A2 20050609, 66 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 2003-386228 20031117.

GI



AB The polymers have repeating units CR<sub>1</sub>(CO<sub>2</sub>R<sub>2</sub>)CH<sub>2</sub> and I (R<sub>1</sub>, R<sub>3</sub> = H, Me, F, trifluoromethyl, cyano, CH<sub>2</sub>CO<sub>2</sub>R<sub>6</sub>, CH<sub>2</sub>OR<sub>5</sub>; R<sub>6</sub> = H, C1-4 alkyl, acid-labile group; R<sub>5</sub> = H, C1-4 alkyl, acyl; R<sub>2</sub> = acid-labile group; X = CO<sub>2</sub>, O). The patterns are manufd. by applying chem. amplified pos. resists contg. the polymers, acid generators, and org. solvents on substrates, heat treatment, exposure by irradiation of high-energy light at wavelength  $\leq 300$  nm or electron beam via a photomask, optionally heat treatment, and development. The patterns show high sensitivity and resolution, and improved O and Cl<sub>2</sub>/BCl<sub>3</sub> etching resistance.

IT **852533-52-9P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane-3-oxo-2,7-dioxatricyclo[4.2.1.0<sup>4,8</sup>]-9-nonanyl methacrylate copolymer  
**852533-53-0P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane copolymer  
 (silicon-contg. polymers having acrylic and **silsesquioxane** repeating units for chem. amplified resists)

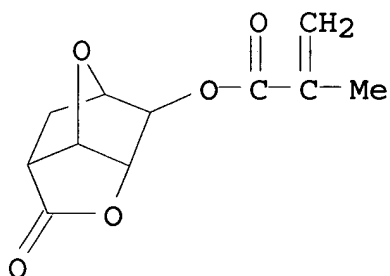
RN 852533-52-9 HCA

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl 2-methyl-2-propenoate and 3-(triethoxysilyl)propyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 274248-05-4

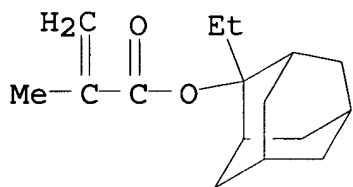
CMF C11 H12 O5



CM 2

CRN 209982-56-9

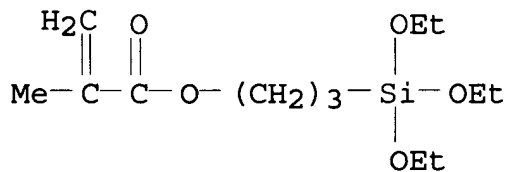
CMF C16 H24 O2



CM 3

CRN 21142-29-0

CMF C13 H26 O5 Si



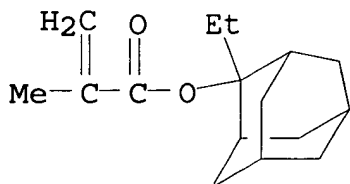
RN 852533-53-0 HCA

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 3-(triethoxysilyl)propyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 209982-56-9

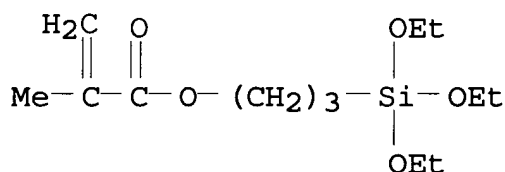
CMF C16 H24 O2



CM 2

CRN 21142-29-0

CMF C13 H26 O5 Si



IT **852533-54-1P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane-2-methoxycarbonyl-5(6)-trimethoxysilylnorbornane-3-oxo-2,7-dioxatricyclo[4.2.1.0<sup>4,8</sup>]-9-nonanyl methacrylate copolymer **852533-55-2P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane-2-methoxycarbonyl-5(6)-trimethoxysilylnorbornane-3-oxo-2,7-dioxatricyclo[4.2.1.0<sup>4,8</sup>]-9-nonanyl methacrylate-2-tert-butoxycarbonyl-5(6)-trimethoxysilylnorbornane copolymer **852533-56-3P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane-2-methoxycarbonyl-5(6)-trimethoxysilylnorbornane copolymer **852533-57-4P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane-2-methoxycarbonyl-5(6)-trimethoxysilylnorbornane-tetraethoxysilane copolymer  
(silicon-contg. polymers having acrylic and **silsesquioxane** repeating units for chem. amplified resists)

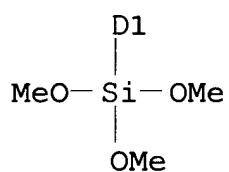
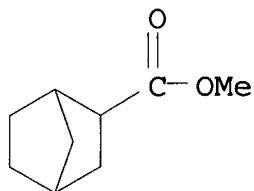
RN 852533-54-1 HCA

CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(trimethoxysilyl)-, methyl ester, polymer with 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate, hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl 2-methyl-2-propenoate and 3-(triethoxysilyl)propyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

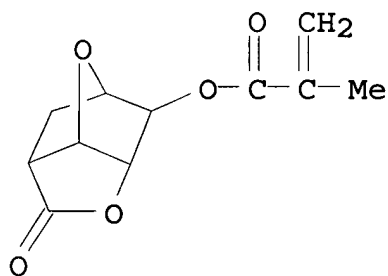
CRN 802986-13-6

CMF C12 H22 O5 Si  
CCI IDS



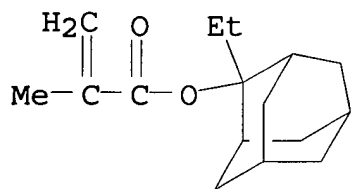
CM 2

CRN 274248-05-4  
CMF C11 H12 O5

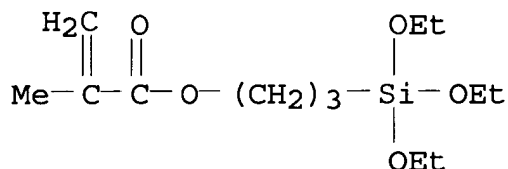


CM 3

CRN 209982-56-9  
CMF C16 H24 O2

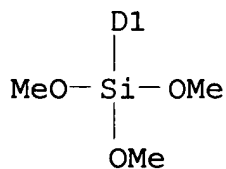
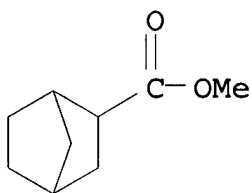


CRN 21142-29-0  
CMF C13 H26 O5 Si



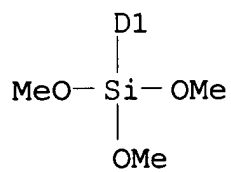
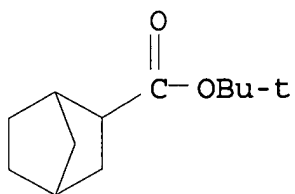
CM 1

CRN 802986-13-6  
CMF C12 H22 O5 Si  
CCI IDS



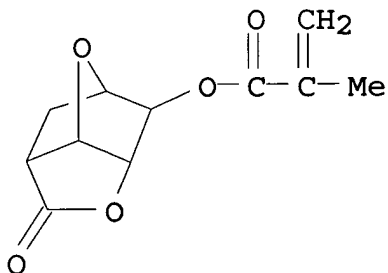
CM 2

CRN 365546-61-8  
CMF C15 H28 O5 Si  
CCI IDS



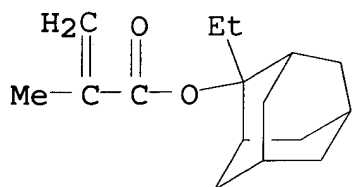
CM 3

CRN 274248-05-4  
CMF C11 H12 O5



CM 4

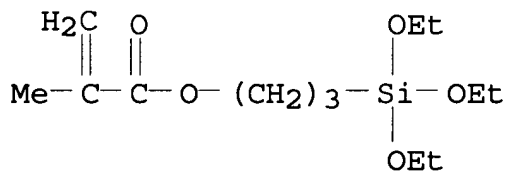
CRN 209982-56-9  
CMF C16 H24 O2



CM 5

CRN 21142-29-0

CMF C13 H26 O5 Si



RN 852533-56-3 HCA

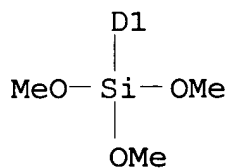
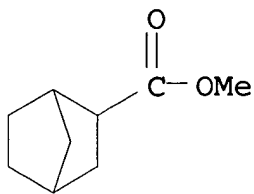
CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(trimethoxysilyl)-, methyl ester, polymer with 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate and 3-(triethoxysilyl)propyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 802986-13-6

CMF C12 H22 O5 Si

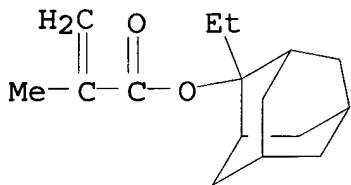
CCI IDS



CM 2

CRN 209982-56-9

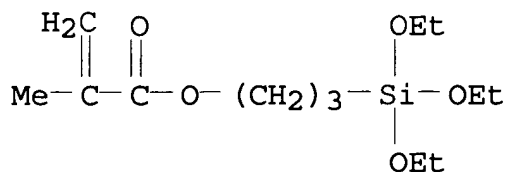
CMF C16 H24 O2



CM 3

CRN 21142-29-0

CMF C13 H26 O5 Si



RN 852533-57-4 HCA

CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(trimethoxysilyl)-, methyl ester, polymer with 2-ethyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate, silicic acid (H4SiO4) tetraethyl ester and

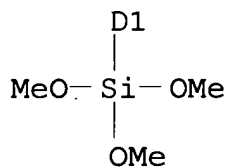
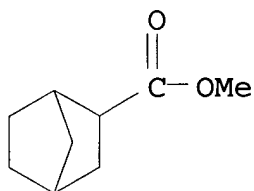
3-(triethoxysilyl)propyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 802986-13-6

CMF C12 H22 O5 Si

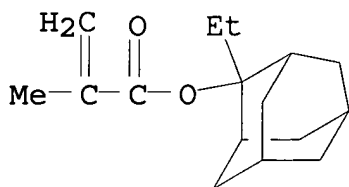
CCI IDS



CM 2

CRN 209982-56-9

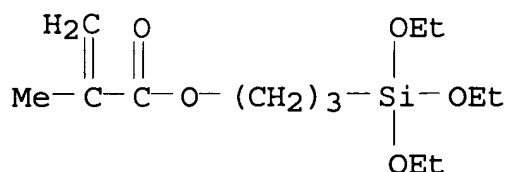
CMF C16 H24 O2



CM 3

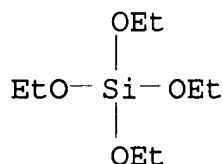
CRN 21142-29-0

CMF C13 H26 O5 Si



CRN 78-10-4

CMF C8 H20 O4 Si



IC ICM C08F008-42  
ICS C08F230-08; C08G077-442; G03F007-039; G03F007-075; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 38  
ST silicon polymer pos chem amplified resist pattern; ethyladamantyl  
methacrylate methacryloxypropyltriethoxysilane  
oxodioxatricyclononane methoxycarbonyl trimethoxysilylnorbornane  
polymer; acrylic **silsesquioxane** polymer pos photoresist  
etching resistance  
IT **Silsesquioxanes**  
(acrylic-silicate-; silicon-contg. polymers having acrylic and  
**silsesquioxane** repeating units for chem. amplified  
resists)  
IT **Silsesquioxanes**  
(acrylic; silicon-contg. polymers having acrylic and  
**silsesquioxane** repeating units for chem. amplified  
resists)  
IT Electron beam resists  
(pos.-working; silicon-contg. polymers having acrylic and  
**silsesquioxane** repeating units for chem. amplified  
resists)  
IT Positive photoresists  
(silicon-contg. polymers having acrylic and  
**silsesquioxane** repeating units for chem. amplified  
resists)  
IT **852533-52-9P**, 2-Ethyl-2-adamantyl methacrylate-3-

methacryloxypropyltriethoxysilane-3-oxo-2,7-dioxatricyclo[4.2.1.0<sup>4</sup>,8]-9-nonanyl methacrylate copolymer **852533-53-0P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane copolymer (silicon-contg. polymers having acrylic and **silsesquioxane** repeating units for chem. amplified resists)

IT **852533-54-1P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane-2-methoxycarbonyl-5(6)-trimethoxysilylnorbornane-3-oxo-2,7-dioxatricyclo[4.2.1.0<sup>4</sup>,8]-9-nonanyl methacrylate copolymer **852533-55-2P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane-2-methoxycarbonyl-5(6)-trimethoxysilylnorbornane-3-oxo-2,7-dioxatricyclo[4.2.1.0<sup>4</sup>,8]-9-nonanyl methacrylate-2-tert-butoxycarbonyl-5(6)-trimethoxysilylnorbornane copolymer **852533-56-3P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane-2-methoxycarbonyl-5(6)-trimethoxysilylnorbornane copolymer **852533-57-4P**, 2-Ethyl-2-adamantyl methacrylate-3-methacryloxypropyltriethoxysilane-2-methoxycarbonyl-5(6)-trimethoxysilylnorbornane-tetraethoxysilane copolymer (silicon-contg. polymers having acrylic and **silsesquioxane** repeating units for chem. amplified resists)

L70 ANSWER 4 OF 45 HCA COPYRIGHT 2006 ACS on STN

142:490395 Photoimaging compositions with high sensitivity to excimer laser and small line edge roughness. Nishimura, Isao; Shimokawa, Tsutomu; Sugiura, Makoto (JSR Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005134456 A2 20050526, 58 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-367470 20031028.

AB The compns. comprise (A) resins having repeating units OSi(R1CO<sub>2</sub>CR<sub>2</sub>3)O (R<sub>1</sub> = C<sub>1</sub>-20 hydrocarbylene, C<sub>3</sub>-20 alicyclic hydrocarbylene; R<sub>2</sub> = C<sub>1</sub>-4 alkyl, C<sub>4</sub>-20 alicyclic hydrocarbyl, etc.), (B) resins having repeating units CR<sub>3</sub>2CR<sub>3</sub>R<sub>4</sub>(CCFaH<sub>3</sub>-aCFbH<sub>3</sub>-bOR<sub>5</sub>)<sub>c</sub> (R<sub>3</sub> = H, F, Me, CF<sub>3</sub>; R<sub>4</sub> = C<sub>1</sub>-20 (c + 1)-valent hydrocarbon group, C<sub>3</sub>-20 (c + 1)-valent alicyclic hydrocarbon group, may contain CO<sub>2</sub> or O; R<sub>5</sub> = H, monovalent acid-dissociable group; a, b = 0-3; a + b .gtoreq.1; c = 1-3), and (C) photoacid generators.

IT **851314-61-9P** (pos. photoresists with high sensitivity to excimer laser and small line edge roughness)

RN 851314-61-9 HCA

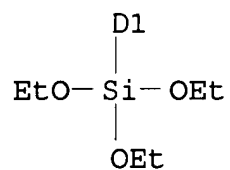
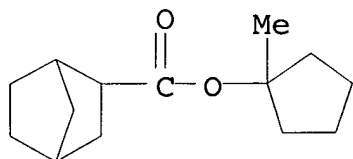
CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(triethoxysilyl)-, 1-methylcyclopentyl ester, polymer with triethoxymethylsilane and 5(or 6)-(triethoxysilyl)-.alpha..alpha.-bis(trifluoromethyl)bicyclo[2.2.1]heptane-2-ethanol (9CI) (CA INDEX NAME)

CM 1

CRN 727425-18-5

CMF C20 H36 O5 Si

CCI IDS

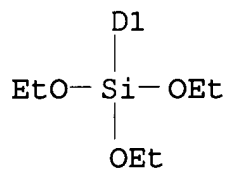
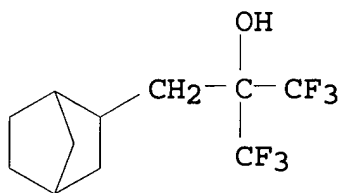


CM 2

CRN 365546-74-3

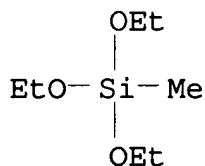
CMF C17 H28 F6 O4 Si

CCI IDS



CM 3

CRN 2031-67-6  
CMF C7 H18 O3 Si



- IC ICM G03F007-039  
ICS C08F022-20; G03F007-075; H01L021-027; C08G077-14
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST photoimaging resist excimer laser fluoropolymer polysiloxane; pos photoresist UV excimer fluoropolymer **silsesquioxane**
- IT **Silsesquioxanes**  
(fluorine-contg.; pos. photoresists with high sensitivity to excimer laser and small line edge roughness)
- IT **Silsesquioxanes**  
(pos. photoresists with high sensitivity to excimer laser and small line edge roughness)
- IT Fluoropolymers, preparation  
(**silsesquioxane**-; pos. photoresists with high sensitivity to excimer laser and small line edge roughness)
- IT 365546-85-6P 430437-18-6P **851314-61-9P** 851896-77-0P  
(pos. photoresists with high sensitivity to excimer laser and small line edge roughness)
- L70 ANSWER 5 OF 45 HCA COPYRIGHT 2006 ACS on STN  
142:455257 High-reliability anisotropic conductive films. Matsuse, Takahiro (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2005123025 A2, 20050512, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-356611 20031016.
- AB The anisotropic conductive films, showing good cond. and insulating property in the thickness and planar direction, resp., and useful for narrow-pitch circuits, comprise adhesive resin compns. contg. (0.1-15 vol% of) conductive particles with av. diam. 2-6 .mu.m and 30%-compression load/0.100-0.600 g in a compressive deformation test at loading rate 0.23 g/s and test load 3 g to one particle. The compns. may comprise thermosetting or photocurable resin compns. contg. polyacetal resins (having aliph. unsatd. groups in the **side chains**) or solvent-sol. polyester unsatd. compds. The compns. may contain org. peroxides or photosensitizers, reactive compds. having (meth)acryloxy or epoxy groups, silane coupling agents, and/or hydrocarbon resins.
- IT **2530-85-0**, .gamma.-Methacryloyloxypropyltrimethoxysilane  
(coupling agents; high-reliability anisotropic conductive films)

RN 2530-85-0 HCA

$$\text{Me}-\overset{\text{H}_2\text{C}}{\underset{\parallel}{\text{C}}}-\overset{\text{O}}{\underset{\parallel}{\text{C}}}-\text{O}-(\text{CH}_2)_3-\underset{\text{OMe}}{\overset{\text{OMe}}{\text{Si}}}-\text{OMe}$$

ICS C09J004-02; C09J007-00; C09J009-02; C09J011-00; C09J129-14;  
C09J163-00; C09J167-06; H01B005-00; H01B005-16

IT Polyvinyl acetals

IT 2530-85-0, .gamma.-Methacryloyloxypropyltrimethoxysilane  
(coupling agents; high-reliability anisotropic conductive films  
contg. conductive particles with prescribed diam. and compression  
load)

142:447820 Efficient purification of polysiloxanes. Nishimura, Isao; Chiba, Takashi; Hayashi, Akihiro (JSR Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005126592 A2 20050519, 33 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-364632 20031024.

AB The purifn. method contains (A) mixing C1-3 mono- or polyhydric alcs. with polysiloxanes with Mw .gtoreq.1000 (as polystyrene) or their solns. in solvents (excluding C1-3 mono- or polyhydric alcs. and free OH-contg. C1-10 alkyl ethers of C1-10 aliph. polyhydric alcs.) with EtOH soly. .gtoreq.100 g/100 g at 25.degree., (B) adding .gtoreq.1 C5-10 hydrocarbons to the mixed solns. for phase sepn., and (C) collecting the polysiloxanes from the phase of the C1-3 alcs. Alternatively, the polysiloxanes or their solns. are mixed with mixts. of water and compds. selected from C1-10 mono- or polyhydric alcs. and free OH-contg. C1-10 alkyl ethers of C1-10 aliph. polyhydric alcs. instead of with the C1-3 alcs. The polysiloxanes are useful for photoresists. Thus, mixing a 4-methyl-2-pentanone soln. of methylcyclopentyl triethoxysilylnorbornanecarboxylate-bis(trifluoromethyl)hydroxyethyl-triethoxysilylnorbornane-methyltriethoxysilane copolymer with MeOH then with n-heptane, phase-sepg., and collecting the lower phase gave the polysiloxane with yield 93% and purifn. degree >95%.

IT 727425-17-4P 851314-61-9P

(efficient purifn. of polysiloxanes by solvent extn. using alcs.)

RN 727425-17-4 HCA

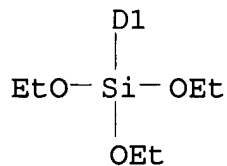
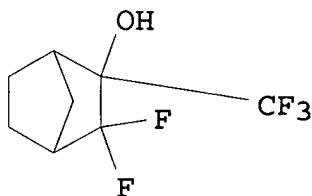
CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, decahydro-6(or 7)-(triethoxysilyl)-, 1,1-dimethylethyl ester, polymer with 3,3-difluoro-5(or 6)-(triethoxysilyl)-2-(trifluoromethyl)bicyclo[2.2.1]heptan-2-ol and triethoxymethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 727425-11-8

CMF C14 H23 F5 O4 Si

CCI IDS

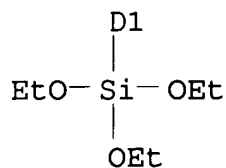
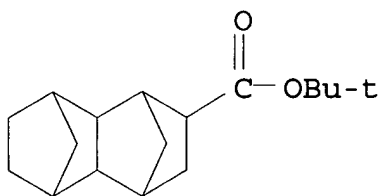


CM 2

CRN 365546-67-4

CMF C23 H40 O5 Si

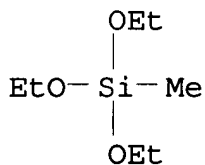
CCI IDS



CM 3

CRN 2031-67-6

CMF C7 H18 O3 Si



RN 851314-61-9 HCA

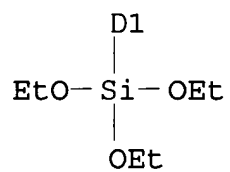
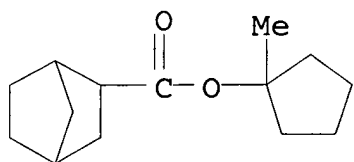
CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(triethoxysilyl)-, 1-methylcyclopentyl ester, polymer with triethoxymethylsilane and 5(or 6)-(triethoxysilyl)-.alpha.,.alpha.-bis(trifluoromethyl)bicyclo[2.2.1]heptane-2-ethanol (9CI) (CA INDEX NAME)

CM 1

CRN 727425-18-5

CMF C20 H36 O5 Si

CCI IDS

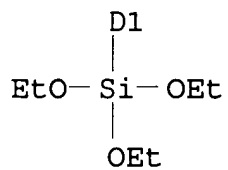
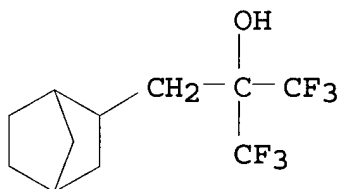


CM 2

CRN 365546-74-3

CMF C17 H28 F6 O4 Si

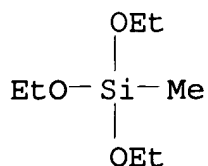
CCI IDS



CM 3

CRN 2031-67-6

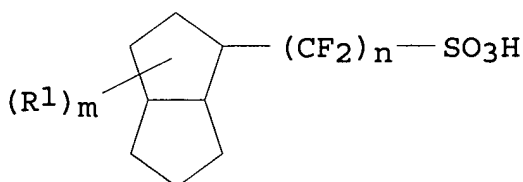
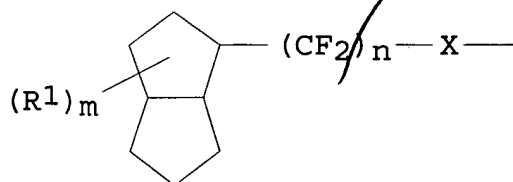
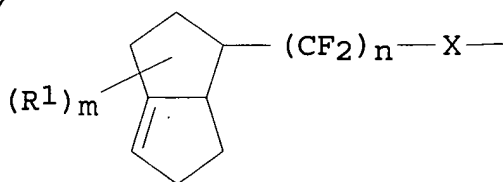
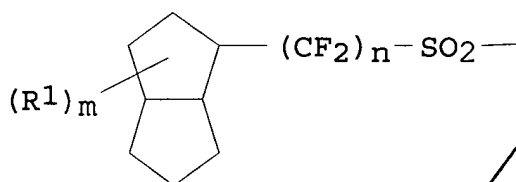
CMF C7 H18 O3 Si



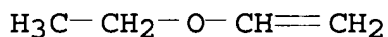
IC ICM C08G077-34  
ICS G03F007-075  
CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 74  
ST polysiloxane purifn alc phase sepn photoresist; methanol heptane  
extn ethoxysilylnorbornane **silsesquioxane** purifn  
IT **Silsesquioxanes**  
(efficient purifn. of polysiloxanes by solvent extn. using alcs.)  
IT **727425-17-4P 851314-61-9P**  
(efficient purifn. of polysiloxanes by solvent extn. using alcs.)

L70 ANSWER 7 OF 45 HCA COPYRIGHT 2006 ACS on STN  
142:438693 Radiation-sensitive positive/negative photoresists, photoacid  
generators therefor, and halogen-containing bicyclooctenes/octanes,  
sulfonic acids (salts), and sulfonyl halides therefor. Ebata,  
Satoshi; Yoneda, Eiji; Wang, Yong (JSR Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2005112724 A2 20050428, 81 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2003-344623 20031002.

GI



- AB The photoacid generators, showing good flammability and less accumulation in human bodies, have structures I (R1 = monovalent or divalent substituent; m = 0-10; n = 1-5) such as onium sulfonates or N-sulfonyloxyimides. Also claimed are halo-contg. bicyclooctenes II (R1, m, n = same as above; X = Cl, Br, I; double bond position may be changed), halo-contg. bicyclooctanes III (R1, X, m, n = same as above), and sulfonic acids IV (R1, m, n = same as above), Na, Ka, or Li salts of them, and sulfonyl halides derived therefrom. Pos. photoresists, contg. the photoacid generators and alkali-insol. resins having groups which can be eliminated by acids to show alkali soly., and neg. photoresists, contg. the photoacid generators, alkali-sol. resins, and compds. crosslinking the resins in the presence of acids, show high transparency to far-UV or electron beams and form sharp patterns.
- IT 109-92-2DP, Ethyl vinyl ether, ether with 4-tert-butoxystyrene-4-hydroxystyrene copolymer (photoacid generators contg. **bicyclooctanylfluoroalkylsulfon yl** units for radiation-sensitive pos./neg. photoresists)
- RN 109-92-2 HCA
- CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



- IC ICM C07C309-19
- ICS C07C022-00; C07C022-02; C07C025-02; C07C025-22; C07C043-225; C07C069-732; C07C069-76; C07C309-80; C07C381-12; G03F007-004; G03F007-038; G03F007-039; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- ST pos neg photoresist **bicyclooctanylfluoroalkylsulfonyl** photoacid generator; phenylsulfonium **fluorooctahydropentalenylethane** sulfonate photoacid generator photoresist; saponified acetoxystyrene copolymer pos photoresist chem amplified
- IT Negative photoresists
- Positive photoresists (chem. amplified; photoacid generators contg. **bicyclooctanylfluoroalkylsulfonyl** units for radiation-sensitive pos./neg. photoresists)
- IT **Silsesquioxanes** (fluorine-contg.; photoacid generators contg. **bicyclooctanylfluoroalkylsulfonyl** units for radiation-sensitive pos./neg. photoresists)
- IT **Fluoropolymers**, preparation (silsesquioxane-; photoacid generators contg. **bicyclooctanylfluoroalkylsulfonyl** units for

- radiation-sensitive pos./neg. photoresists)
- IT 147297-42-5P 850629-20-8P 850629-21-9P 850629-22-0P  
850629-23-1P  
(in prepn. of photoacid generators; acid generators contg.  
**bicyclooctanylfuoroalkylsulfonyl** units for  
radiation-sensitive pos./neg. photoresists)
- IT 421-70-5, 1-Bromo-2-iodo-1,1,2,2-tetrafluoroethane  
3353-89-7, Triphenylsulfonium bromide 29965-97-7, Cyclooctadiene  
(in prepn. of photoacid generators; acid generators contg.  
**bicyclooctanylfuoroalkylsulfonyl** units for  
radiation-sensitive pos./neg. photoresists)
- IT 850629-28-6P  
(in prepn. of photoacid generators; photoacid generators contg.  
**bicyclooctanylfuoroalkylsulfonyl** units for  
radiation-sensitive pos./neg. photoresists)
- IT 1483-72-3, Diphenyliodonium chloride 1600-44-8, Tetramethylene  
sulfoxide 20900-19-0, 1-Butoxynaphthalene 21715-90-2,  
N-Hydroxy-5-norbornene-2,3-dicarboximide  
(in prepn. of photoacid generators; photoacid generators contg.  
**bicyclooctanylfuoroalkylsulfonyl** units for  
radiation-sensitive pos./neg. photoresists)
- IT 24979-74-6P, 4-Hydroxystyrene-styrene copolymer 221549-67-3DP,  
4-Acetoxy-styrene-tert-butyl acrylate-styrene copolymer, sapond.  
(photoacid generators contg. **bicyclooctanylfuoroalkylsulfonyl**  
units for radiation-sensitive pos./neg. photoresists)
- IT 109-92-2DP, Ethyl vinyl ether, ether with  
4-tert-butoxystyrene-4-hydroxystyrene copolymer 95418-60-3DP,  
4-tert-Butoxystyrene homopolymer, sapond. 123589-22-0DP,  
4-tert-Butoxystyrene-4-hydroxystyrene copolymer, ether with Et vinyl  
ether 340964-24-1P 340964-38-7P 406198-64-9DP,  
4-Acetoxy-styrene-4-tert-butoxystyrene-styrene copolymer, sapond.  
479628-09-6P 670248-60-9P 690258-42-5P 724776-70-9P  
(photoacid generators contg. **bicyclooctanylfuoroalkylsulfonyl**  
units for radiation-sensitive pos./neg. photoresists)
- IT 17464-88-9  
(photoacid generators contg. **bicyclooctanylfuoroalkylsulfonyl**  
units for radiation-sensitive pos./neg. photoresists)
- IT 850629-25-3P 850629-26-4P 850629-27-5P 850629-29-7P  
(photoacid generators; photoacid generators contg.  
**bicyclooctanylfuoroalkylsulfonyl** units for  
radiation-sensitive pos./neg. photoresists)

L70 ANSWER 8 OF 45 HCA COPYRIGHT 2006 ACS on STN

142:186544 Fluorine-substituted alicyclic group-containing polysiloxanes  
and their radiation-sensitive resists. Chiba, Takashi; Shimokawa,  
Tsutomu; Hayashi, Akihiro; Itani, Toshio; Miyoshi, Yasuo; Furukawa,  
Takamitsu (JSR Ltd., Japan; Semiconductor Leading Technologies  
Inc.). Jpn. Kokai Tokkyo Koho JP 2005029742 A2 20050203, 18 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-273289 20030711.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The polysiloxanes, showing Mw 500-1,000,000 measured by GPC, have structural repeating units I and/or II, and III and/or IV [B = H, F; X1, X2 = H, C1-20 (halogenated) hydrocarbyl, halo, amino; m, n = 0, 1; p = 1-10]. The resists contain alkali-insol. polysiloxanes bearing acid-dissociable groups and becoming alkali-sol. upon dissocn. of the groups chosen from the aforementioned polysiloxanes, and photoacid generators. The resists show good transparency to excimer lasers and coating property, and produce high-resoln. images.

IT 830327-89-4P

(fluorine-substituted alicyclic group-contg. polysiloxanes for radiation-sensitive resists showing good transparency to excimer laser)

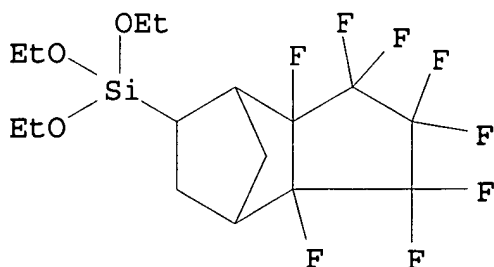
RN 830327-89-4 HCA

CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(triethoxysilyl)-2-(trifluoromethyl)-, 1,1-dimethylethyl ester, polymer with 3,3-difluoro-5(or 6)-(triethoxysilyl)-2-(trifluoromethyl)bicyclo[2.2.1]heptan-2-ol, triethoxy(1,1,2,2,3,3,3a,7a-octafluorooctahydro-4,7-methano-1H-inden-5-yl)silane and triethoxysilane (9CI) (CA INDEX NAME)

CM 1

CRN 778593-48-9

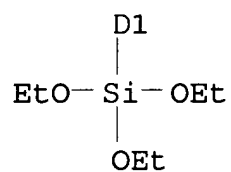
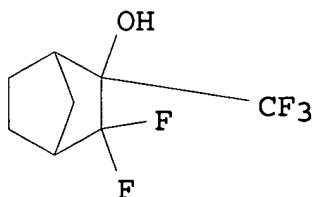
CMF C16 H22 F8 O3 Si



CM 2

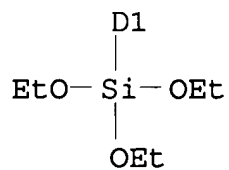
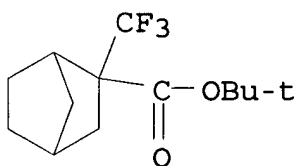
CRN 727425-11-8

CMF C14 H23 F5 O4 Si  
CCI IDS



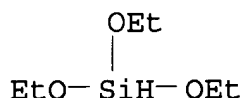
CM 3

CRN 474559-06-3  
CMF C19 H33 F3 O5 Si  
CCI IDS



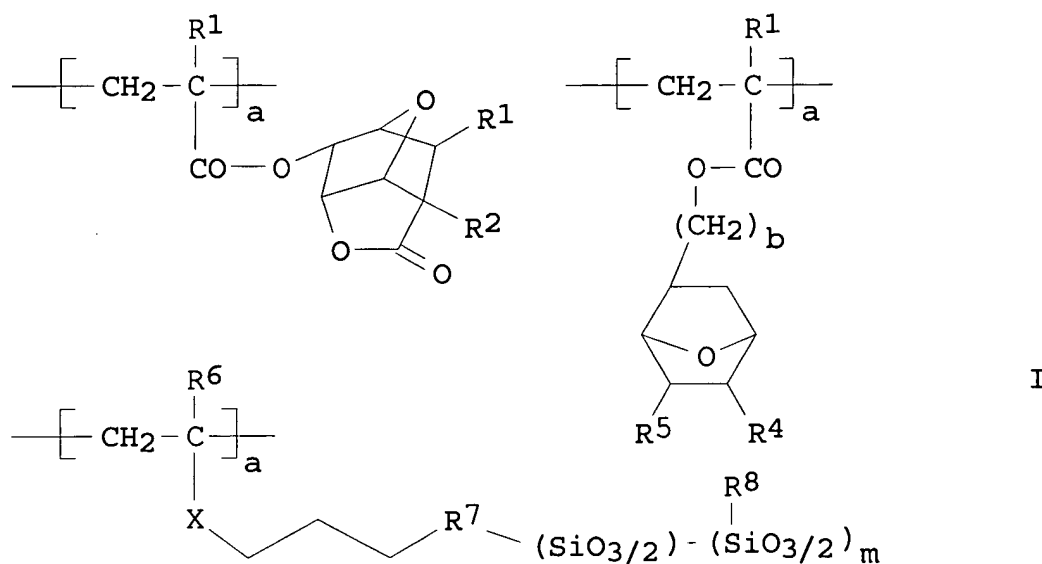
CM 4

CRN 998-30-1  
CMF C6 H16 O3 Si



- IC ICM C08G077-24  
ICS G03F007-075; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 29, 35, 38
- IT **Silsesquioxanes**  
(fluorine-contg.; fluorine-substituted alicyclic group-contg. polysiloxanes for radiation-sensitive resists showing good transparency to excimer laser)
- IT Fluoropolymers, preparation  
(**silsesquioxane**-; fluorine-substituted alicyclic group-contg. polysiloxanes for radiation-sensitive resists showing good transparency to excimer laser)
- IT **830327-89-4P**  
(fluorine-substituted alicyclic group-contg. polysiloxanes for radiation-sensitive resists showing good transparency to excimer laser)
- L70 ANSWER 9 OF 45 HCA COPYRIGHT 2006 ACS on STN  
142:103181 Acrylic polymers, their chemically amplified positive photoresists with high resolution and sensitivity and suppressed line edge roughness, and photolithography using them. Hatakeyama, Jun; Watanabe, Takeshi; Takeda, Takanobu (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005008765 A2 20050113, 58 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-174894 20030619.

GI



AB The acrylic polymers contain repeating units I [R1, R6 = H, Me, F, CF3, CN, CH2CO2R12, CH2OR13; R2 = H, Me, CN; R3 = H, ester; R4, R5 = H, ester, lactone-contg. group; R8 = H, C1-10 alkyl, fluorinated alkyl; R7 = single bond, (SiR9R10R11)n; R9, R10 = C1-10 alkyl; R11 = single bond, O, C1-4 alkylene; X = ester, ether; a, b .gtoreq.0; c >0; 0 < (a + b)/(a + b + c) < 0.8; 0 < c/(a + b + c) < 0.5; m = 4-40; n = 1-20; p = 0-2; R12 = C1-4 alkyl; R13 = H, C1-4 alkyl, C1-4 acyl] and other repeating units that increase alkali soly. of the polymers in the presence of acids. The photolithog. may involve etching with O plasma or halogen gases contg. Cl or Br.

IT 819837-18-8P 819837-20-2P 819837-22-4P  
819837-23-5P 819837-25-7P 819837-27-9P  
819837-29-1P 819837-31-5P 819837-32-6P  
819837-34-8P

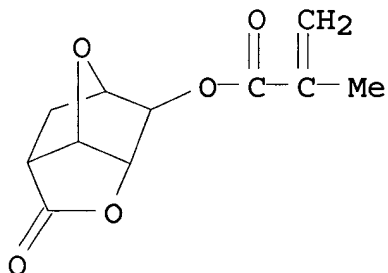
(acrylic polymers having oxonorborene and polyhedral  
oligosilsesquioxane pendants for pos.  
photoresists with high resoln. and suppressed line edge  
roughness)

RN 819837-18-8 HCA

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl  
ester, polymer with 3-(heptacyclopentylpentacyclo[9.5.1.1<sup>3,9</sup>.1<sup>5,15</sup>.1<sup>7,13</sup>]octasiloxanyl)propyl 2-methyl-2-propenoate and  
hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl  
2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CRN 274248-05-4

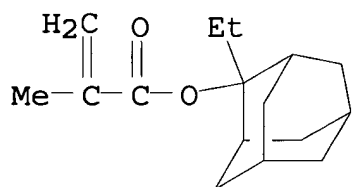
CMF C11 H12 O5



CM 2

CRN 209982-56-9

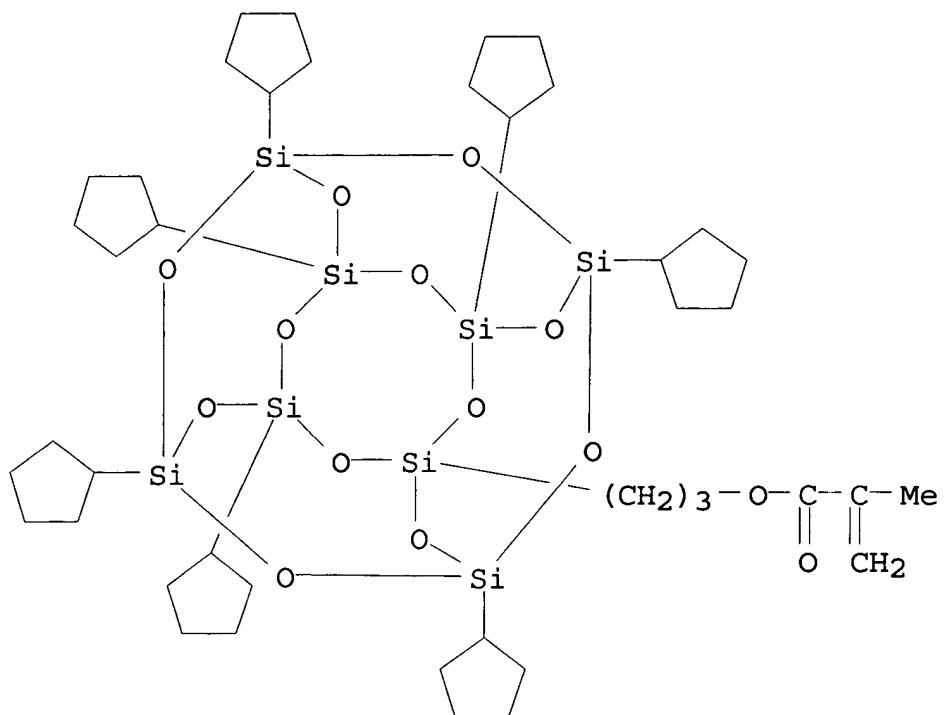
CMF C16 H24 O2



CM 3

CRN 169391-91-7

CMF C42 H74 O14 Si8



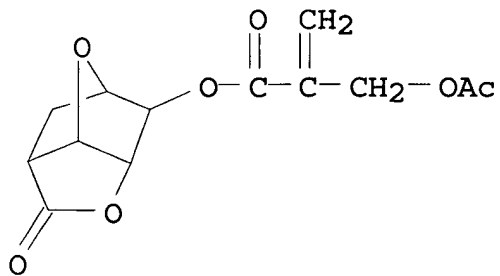
RN 819837-20-2 HCA

CN 2-Propenoic acid, 2-[(acetyloxy)methyl]-, hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl ester, polymer with 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate and 3-(heptacyclopentylpentacyclo[9.5.1.1<sup>3,9</sup>.15.17,13]octasiloxanyl)propyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 819837-19-9

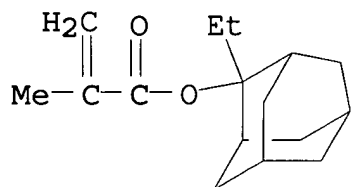
CMF C13 H14 O7



CM 2

CRN 209982-56-9

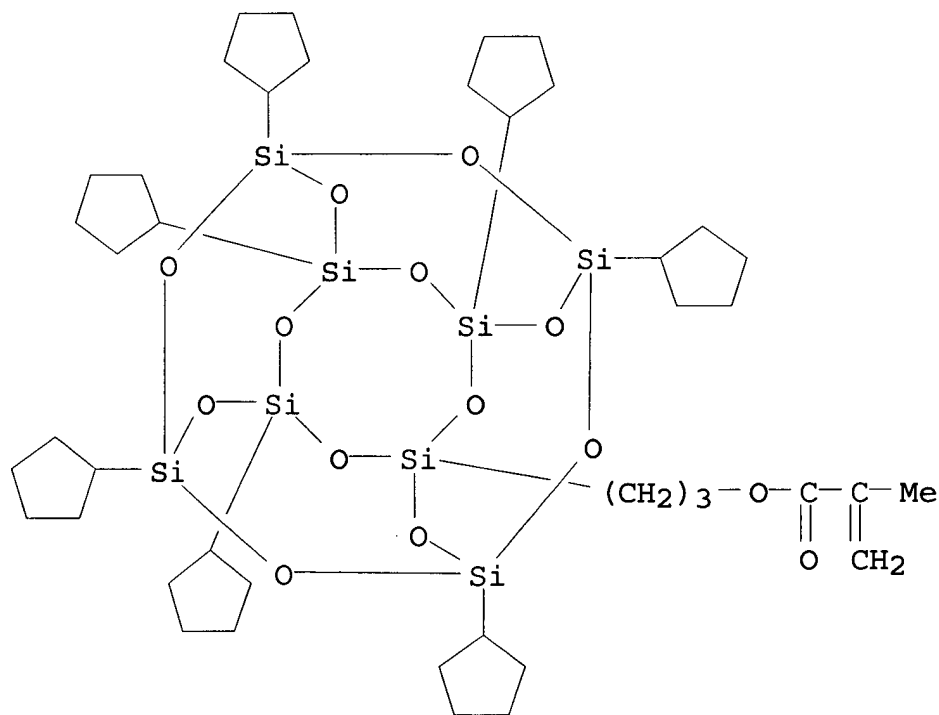
CMF C16 H24 O2



CM 3

CRN 169391-91-7

CMF C42 H74 O14 Si8



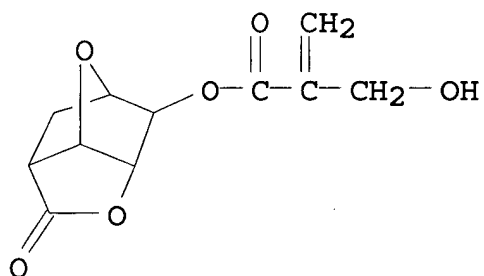
RN 819837-22-4 HCA

CN 2-Propenoic acid, 2-(hydroxymethyl)-, hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl ester, polymer with 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl 2-methyl-2-propenoate and 3-(heptacyclopentylpentacyclo[9.5.1.1<sup>3,9</sup>.15.17,13]octasiloxanyl)propyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 819837-21-3

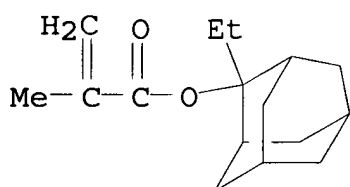
CMF C11 H12 O6



CM 2

CRN 209982-56-9

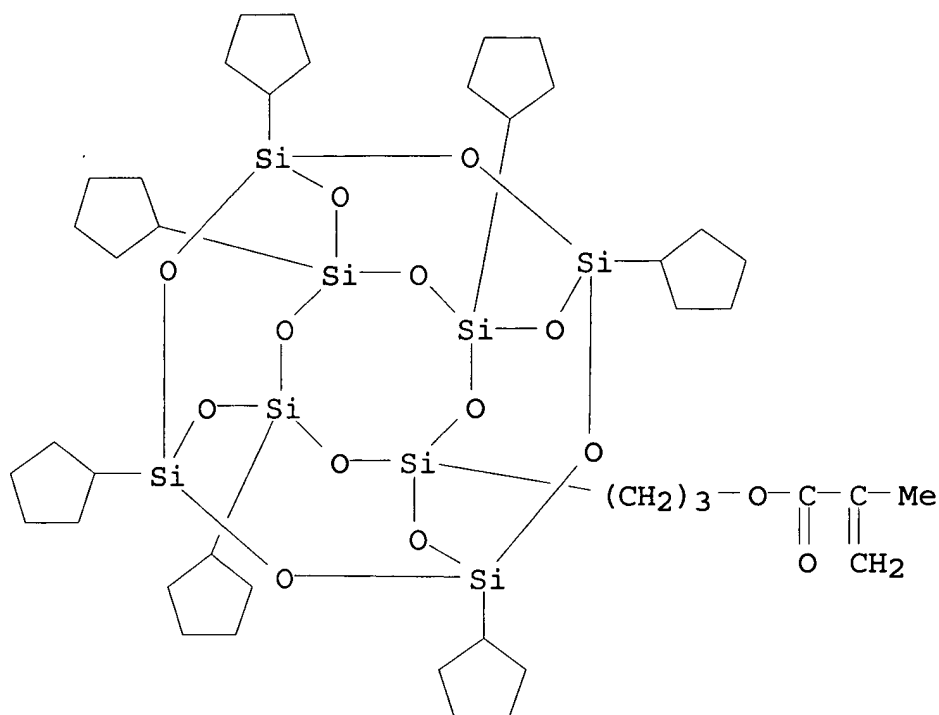
CMF C16 H24 O2



CM 3

CRN 169391-91-7

CMF C42 H74 O14 Si8

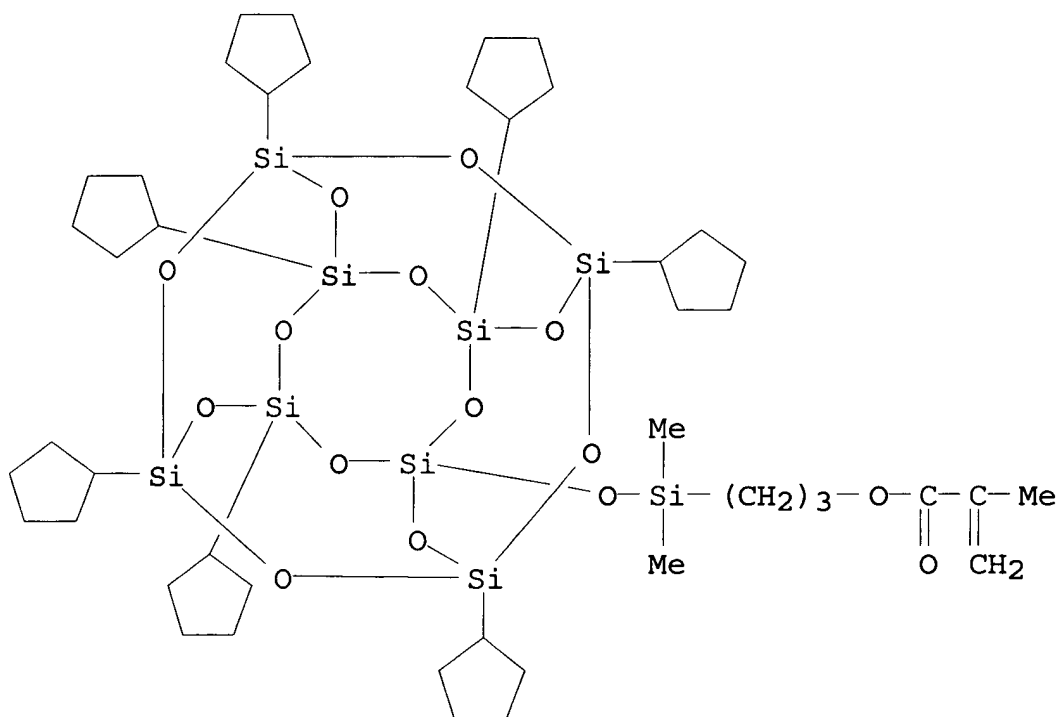


RN 819837-23-5 HCA  
 CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl  
 ester, polymer with 3-[[[(heptacyclopentylpentacyclo[9.5.1.1<sup>3,9</sup>,15  
 .17,13]octasiloxanyl)oxy]dimethylsilyl]propyl 2-methyl-2-propenoate  
 and hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl  
 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 312693-41-7

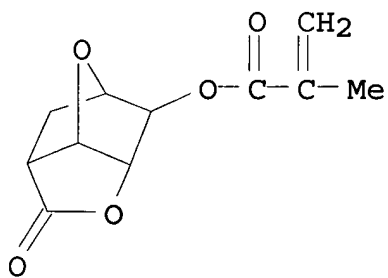
CMF C44 H80 O15 Si9



CM 2

CRN 274248-05-4

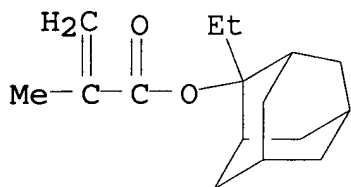
CMF C11 H12 O5



CM 3

CRN 209982-56-9

CMF C16 H24 O2



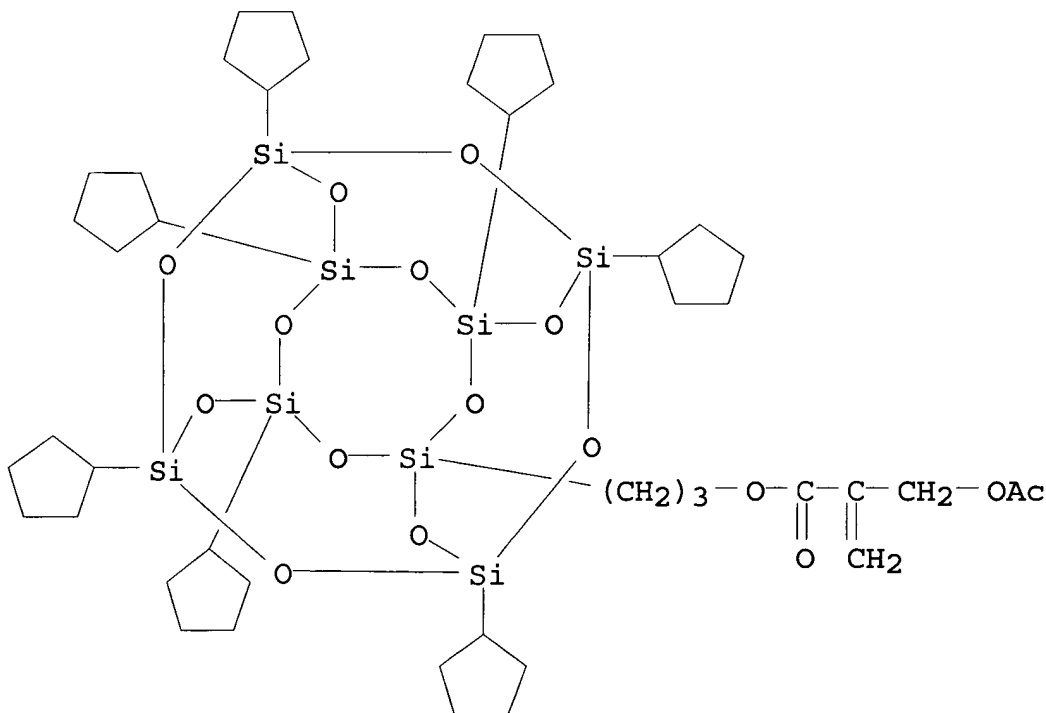
RN 819837-25-7 HCA

CN 2-Propenoic acid, 2-[(acetyloxy)methyl]-, 3-(heptacyclopentylpentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanyl)propyl ester, polymer with 2-ethyltricyclo[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate and hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 819837-24-6

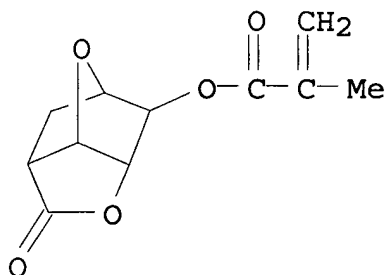
CMF C44 H76 O16 Si8



CM 2

CRN 274248-05-4

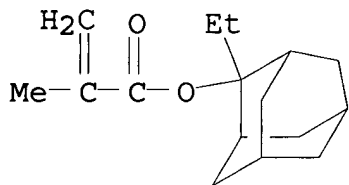
CMF C11 H12 O5



CM 3

CRN 209982-56-9

CMF C16 H24 O2



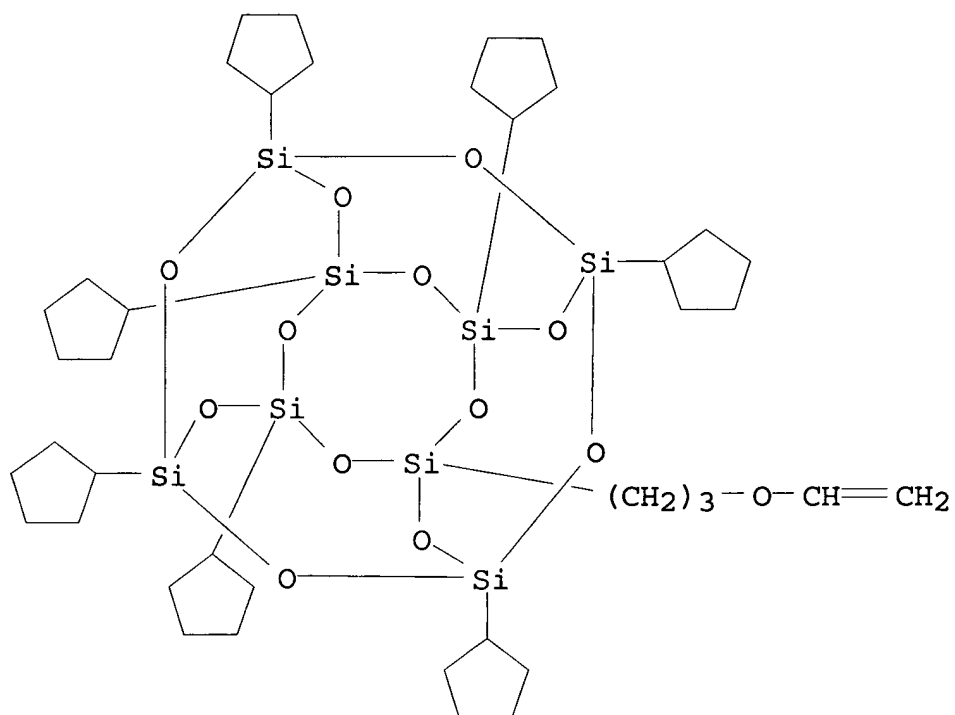
RN 819837-27-9 HCA

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with heptacyclopentyl[3-(ethenyloxy)propyl]pentacyclo[9.5.1.1<sup>3,9</sup>.1<sup>5,17</sup>.1<sup>3</sup>]octasiloxane and hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 819837-26-8

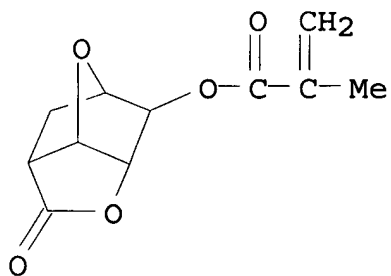
CMF C40 H72 O13 Si8



CM 2

CRN 274248-05-4

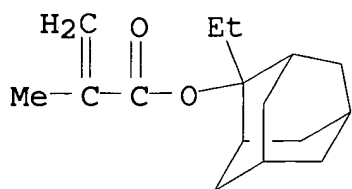
CMF C11 H12 O5



CM 3

CRN 209982-56-9

CMF C16 H24 O2



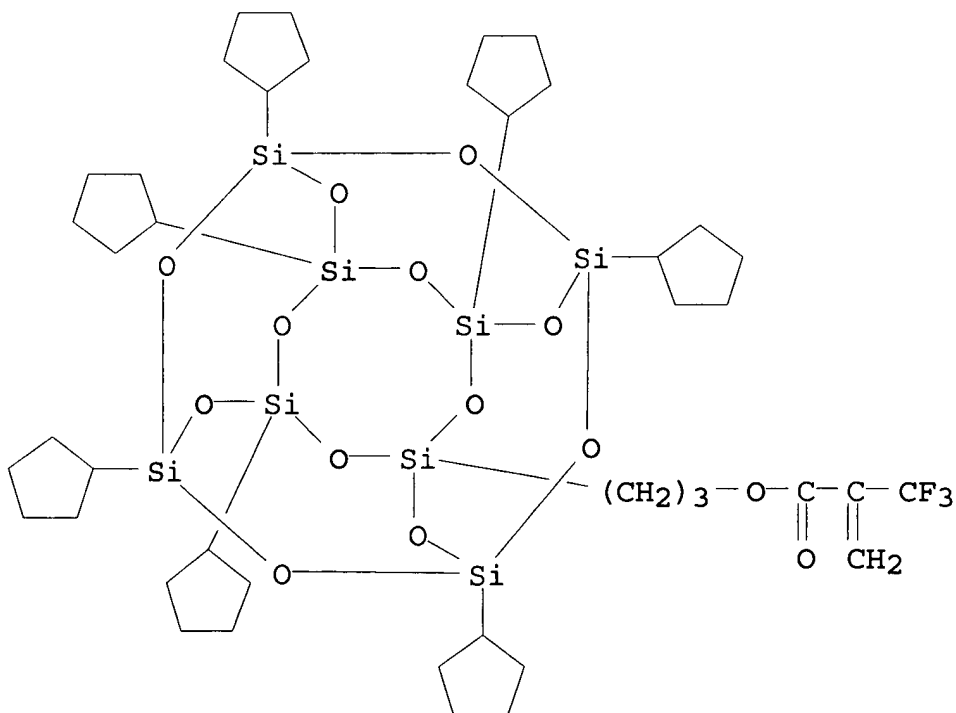
RN 819837-29-1 HCA

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.13,7]dec-2-yl ester, polymer with 3-(heptacyclopentylpentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanyl)propyl 2-(trifluoromethyl)-2-propenoate and hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 819837-28-0

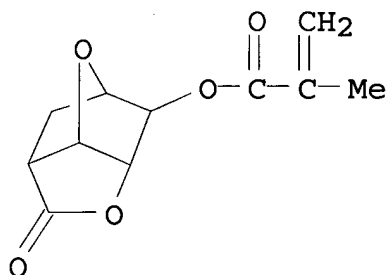
CMF C42 H71 F3 O14 Si8



CM 2

CRN 274248-05-4

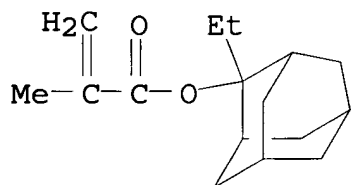
CMF C11 H12 O5



CM 3

CRN 209982-56-9

CMF C16 H24 O2



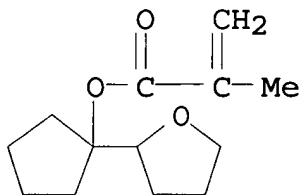
RN 819837-31-5 HCA

CN 2-Propenoic acid, 2-methyl-, 3-(heptacyclopentylpentacyclo[9.5.1.13, 9.15,15.17,13]octasiloxanyl)propyl ester, polymer with hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl 2-methyl-2-propenoate and 1-(tetrahydro-2-furanyl)cyclopentyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

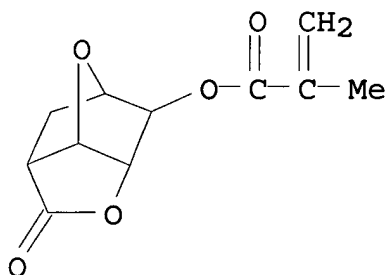
CRN 819837-30-4

CMF C13 H20 O3



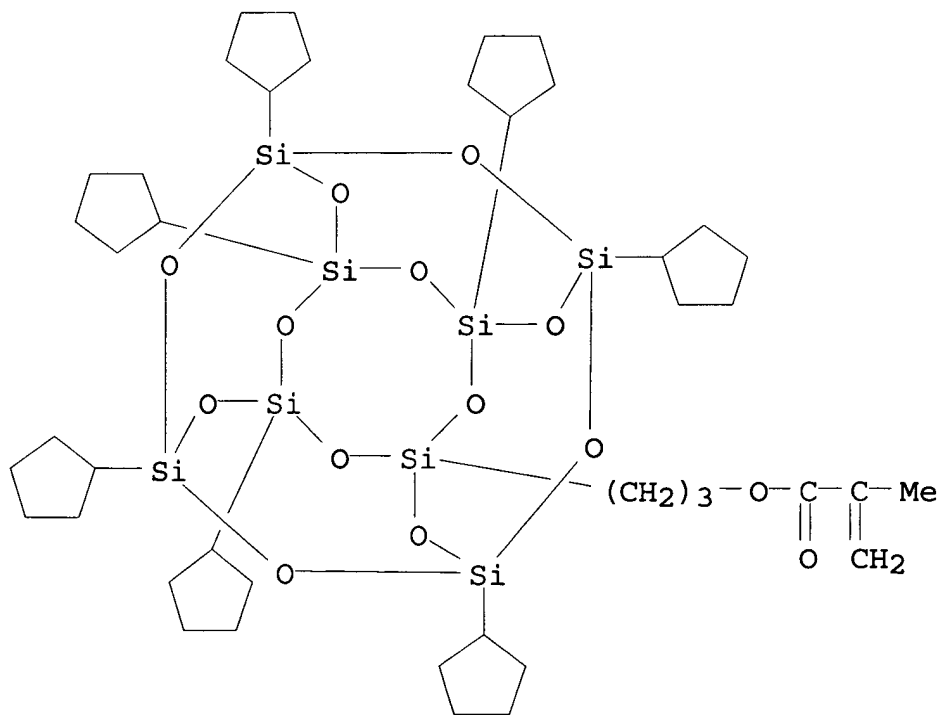
CM 2

CRN 274248-05-4  
CMF C11 H12 O5



CM 3

CRN 169391-91-7  
CMF C42 H74 O14 Si8



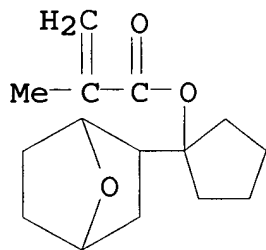
RN 819837-32-6 HCA  
CN 2-Propenoic acid, 2-methyl-, 3-(heptacyclopentylpentacyclo[9.5.1.13, 9.15,15.17,13]octasiloxanyl)propyl ester, polymer with hexahydro-5-oxo-2,6-methanofuro[3,2-b]furan-3-yl 2-methyl-2-propenoate and 1-(7-oxabicyclo[2.2.1]hept-2-

yl)cyclopentyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 676456-72-7

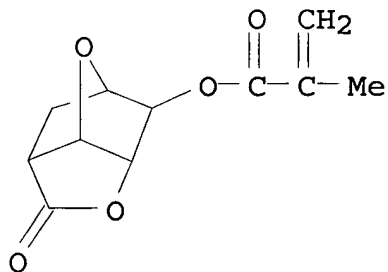
CMF C15 H22 O3



CM 2

CRN 274248-05-4

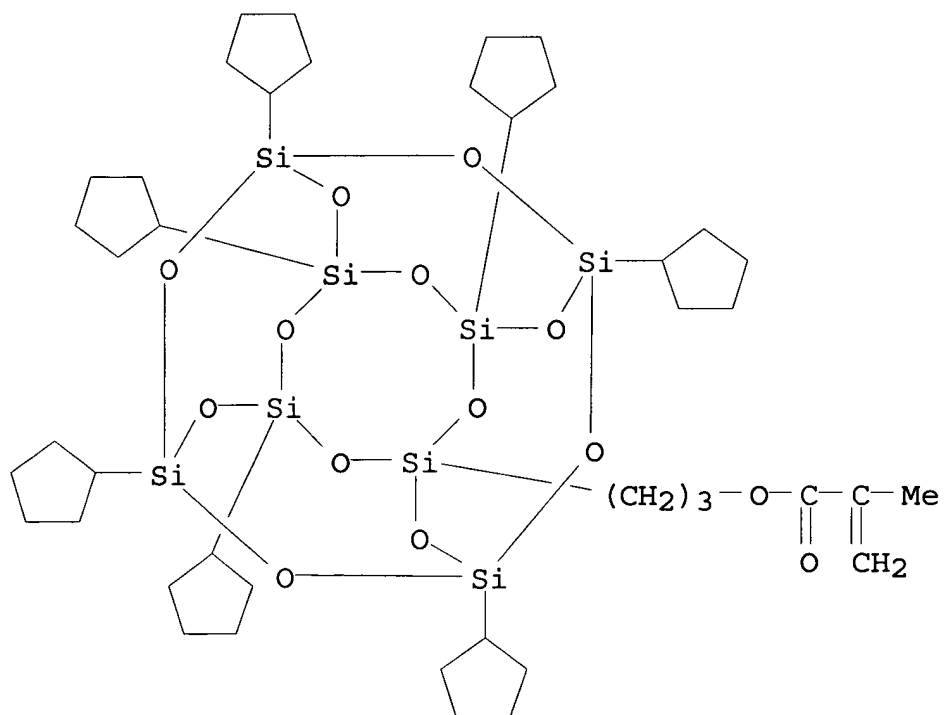
CMF C11 H12 O5



CM 3

CRN 169391-91-7

CMF C42 H74 O14 Si8



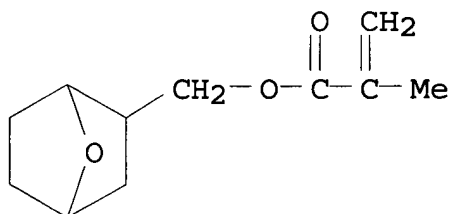
RN 819837-34-8 HCA

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with 3-(heptacyclopentylpentacyclo[9.5.1.1<sup>3,9</sup>.1<sup>5,17</sup>.1<sup>7,13</sup>]octasiloxanyl)propyl 2-methyl-2-propenoate and 7-oxabicyclo[2.2.1]hept-2-ylmethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 819837-33-7

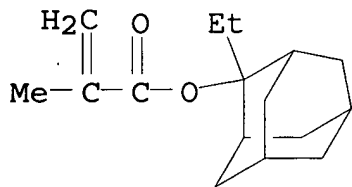
CMF C11 H16 O3



CM 2

CRN 209982-56-9

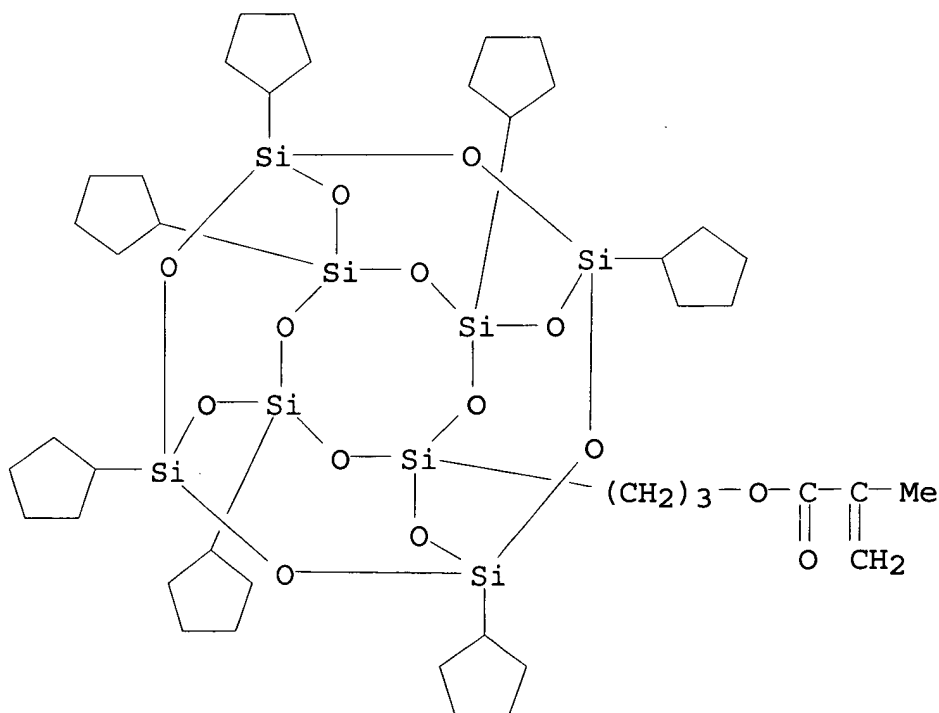
CMF C16 H24 O2



CM 3

CRN 169391-91-7

CMF C42 H74 O14 Si8



IC ICM C08F230-08

ICS G03F007-039; G03F007-075

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

ST acrylic polymer oxonorborene polyhedral **oligosilsesquioxane** photoresist resoln; sensitivity acrylic pos photoresist chem amplification POSS

IT Positive photoresists

- (UV; acrylic polymers having oxonorbornane and polyhedral **oligosilsesquioxane pendants** for pos. photoresists with high resolu. and suppressed line edge roughness)
- IT Photolithography  
(acrylic polymers having oxonorbornane and polyhedral **oligosilsesquioxane pendants** for pos. photoresists with high resolu. and suppressed line edge roughness)
- IT Fluoropolymers, preparation  
(acrylic; acrylic polymers having oxonorbornane and polyhedral **oligosilsesquioxane pendants** for pos. photoresists with high resolu. and suppressed line edge roughness)
- IT 819837-18-8P 819837-20-2P 819837-22-4P  
819837-23-5P 819837-25-7P 819837-27-9P  
819837-29-1P 819837-31-5P 819837-32-6P  
819837-34-8P  
(acrylic polymers having oxonorbornane and polyhedral **oligosilsesquioxane pendants** for pos. photoresists with high resolu. and suppressed line edge roughness)
- IT 102-71-6, Triethanolamine, uses 3002-18-4 211919-60-7  
449165-34-8  
(base; acrylic polymers having oxonorbornane and polyhedral **oligosilsesquioxane pendants** for pos. photoresists with high resolu. and suppressed line edge roughness)
- IT 409321-21-7 409321-23-9  
(dissolving inhibitor; acrylic polymers having oxonorbornane and polyhedral **oligosilsesquioxane pendants** for pos. photoresists with high resolu. and suppressed line edge roughness)
- IT 7726-95-6, Bromine, uses 7782-44-7, Oxygen, uses 7782-50-5,  
Chlorine, uses 10294-34-5, Trichloroborane  
(etching with; acrylic polymers having oxonorbornane and polyhedral **oligosilsesquioxane pendants** for pos. photoresists with high resolu. and suppressed line edge roughness)
- IT 144317-44-2 348137-47-3  
(photoacid generator; acrylic polymers having oxonorbornane and polyhedral **oligosilsesquioxane pendants** for pos. photoresists with high resolu. and suppressed line edge roughness)

L70 ANSWER 10 OF 45 HCA COPYRIGHT 2006 ACS on STN

142:30014 Silicon-containing polymer, resist composition and patterning process. Hatakeyama, Jun; Takeda, Takanobu (Japan). U.S. Pat.

Appl. Publ. US 2004242821 A1 20041202, 38 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-853783 20040526. PRIORITY: JP 2003-148656 20030527.

AB Novel silicon-contg. polymers are provided comprising recurring units having a POSS **pendant** and units which improve alkali soly. under the action of an acid. Resist compns. comprising the polymers are sensitive to high-energy radiation and have a high sensitivity and resolu. at a wavelength of up to 300 nm and improved resistance to oxygen plasma etching.

IT 802917-23-3P 802917-24-4P

(silicon-contg. polymer, resist compn. and patterning process)

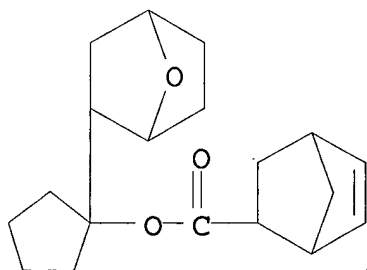
RN 802917-23-3 HCA

CN Bicyclo[2.2.1]hept-5-ene-2-carboxylic acid, 1-(7-oxabicyclo[2.2.1]hept-2-yl)cyclopentyl ester, polymer with 2,5-furandione and heptacyclopentyl[(ethenyldimethylsilyl)oxy]pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxane (9CI) (CA INDEX NAME)

CM 1

CRN 676456-74-9

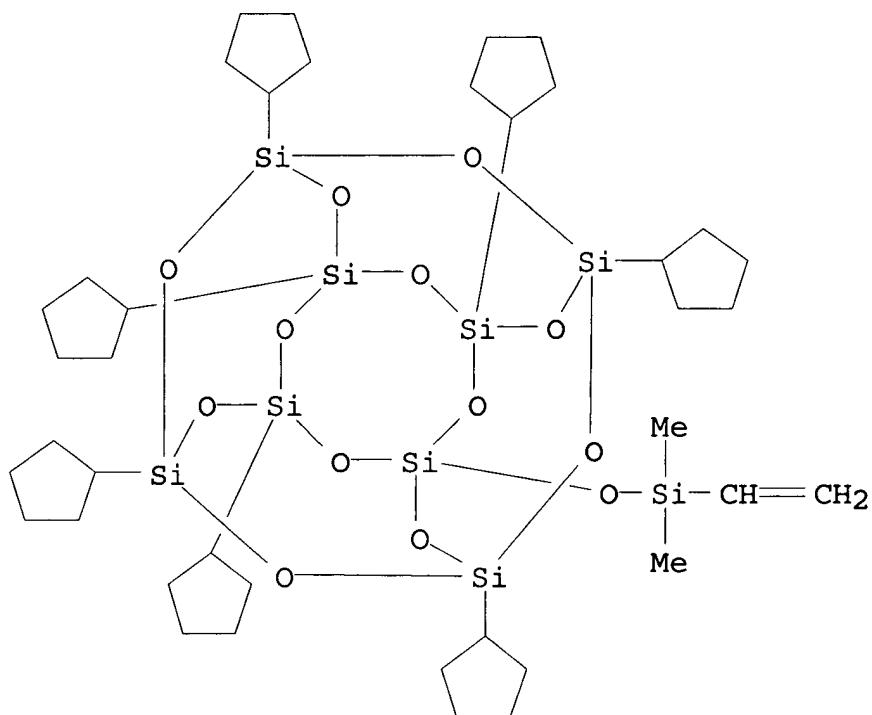
CMF C19 H26 O3



CM 2

CRN 312693-40-6

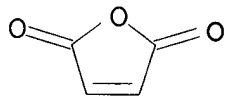
CMF C39 H72 O13 Si9



CM 3

CRN 108-31-6

CMF C4 H2 O3



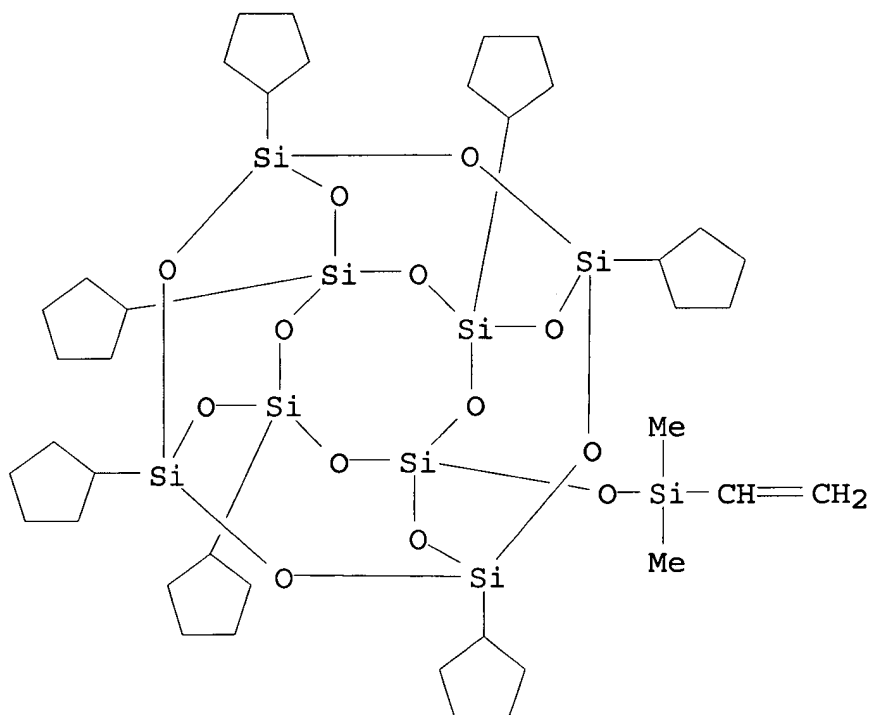
RN 802917-24-4 HCA

CN 2-Propenoic acid, 2-methyl-, 2-ethyltricyclo[3.3.1.1<sup>3,7</sup>]dec-2-yl ester, polymer with heptacyclopentyl[(ethenyldimethylsilyl)oxy]penta cyclo[9.5.1.1<sup>3,9</sup>.15.17.13]octasiloxane and methyl ethenesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 312693-40-6

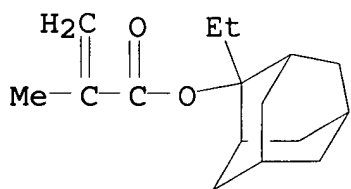
CMF C39 H72 O13 Si9



CM 2

CRN 209982-56-9

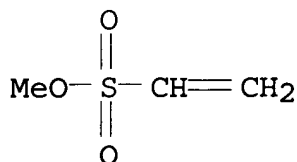
CMF C16 H24 O2



CM 3

CRN 1562-31-8

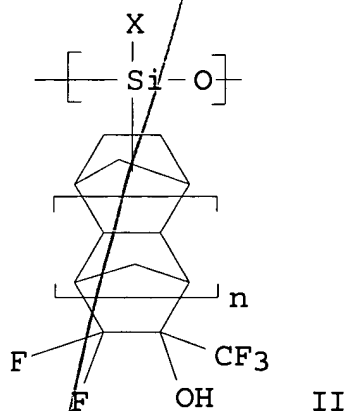
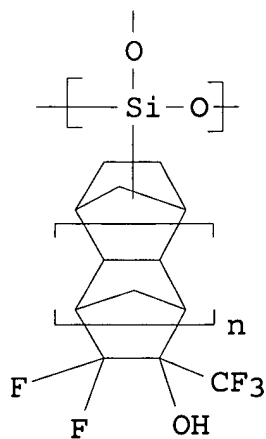
CMF C3 H6 O3 S



IC ICM G03F007-004  
 ICS C08F122-04; C08F222-04  
 INCL 526250000; 430270100; 430322000; 430330000; 526271000; 526279000  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 38  
 IT 802917-18-6P 802917-19-7P 802917-20-0P 802917-21-1P  
 802917-22-2P 802917-23-3P 802917-24-4P  
 802917-25-5P  
 (silicon-contg. polymer, resist compn. and patterning process)

L70 ANSWER 11 OF 45 HCA COPYRIGHT 2006 ACS on STN  
 141:148104 Fluorinated norbornene compounds, silicon-containing  
 derivatives of them, polysiloxanes from them, and  
 radiation-sensitive compositions containing them. Chiba, Takashi;  
 Shimokawa, Tsutomu; Hayashi, Akihiro; Sugie, Norihiko (JSR Ltd.,  
 Japan). Jpn. Kokai Tokkyo Koho JP 2004210771 A2 20040729, 53 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-420199 20031217.  
 PRIORITY: JP 2002-365297 20021217.

GI



AB The compns., useful for photoresists with good sensitivity to

excimer lasers, resoln., and dry-etching resistance, contain the polysiloxanes (Mw 500-1,000,000, which are alkali-insol. but become alkali-sol. by dissocn. of acid-labile groups) having units I and/or II [n = 0, 1; X = H, C1-20 (halogenated) hydrocarbyl, halo, amino] and radiation-sensitive photoacid generators.

IT 727425-17-4P 727425-19-6P 727425-20-9P

(radiation-sensitive photoresists contg. polysiloxanes bearing fluorinated norbornene groups with good sensitivity, resoln., and dry etching resistance)

RN 727425-17-4 HCA

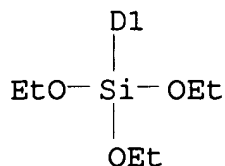
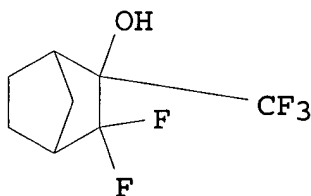
CN 1,4:5,8-Dimethanonaphthalene-2-carboxylic acid, decahydro-6(or 7)-(triethoxysilyl)-, 1,1-dimethylethyl ester, polymer with 3,3-difluoro-5(or 6)-(triethoxysilyl)-2-(trifluoromethyl)bicyclo[2.2.1]heptan-2-ol and triethoxymethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 727425-11-8

CMF C14 H23 F5 O4 Si

CCI IDS

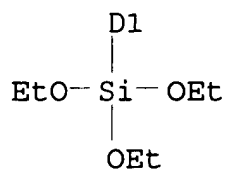
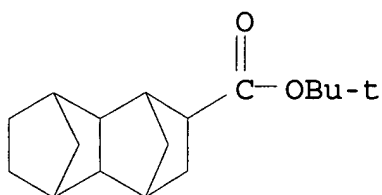


CM 2

CRN 365546-67-4

CMF C23 H40 O5 Si

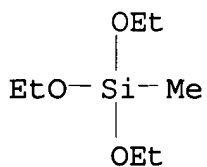
CCI IDS



CM 3

CRN 2031-67-6

CMF C7 H18 O3 Si



RN 727425-19-6 HCA

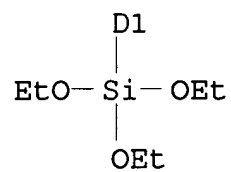
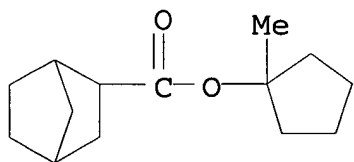
CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(triethoxysilyl)-, 1-methylcyclopentyl ester, polymer with 3,3-difluoro-5(or 6)-(triethoxysilyl)-2-(trifluoromethyl)bicyclo[2.2.1]heptan-2-ol and triethoxymethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 727425-18-5

CMF C20 H36 O5 Si

CCI IDS

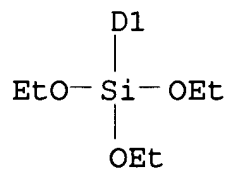
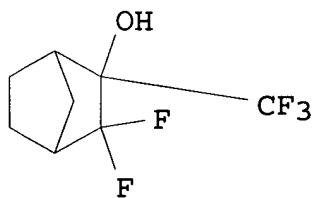


CM 2

CRN 727425-11-8

CMF C14 H23 F5 O4 Si

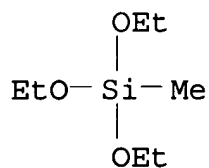
CCI IDS



CM 3

CRN 2031-67-6

CMF C7 H18 O3 Si



RN 727425-20-9 HCA

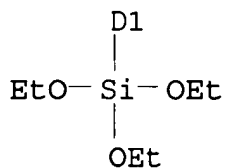
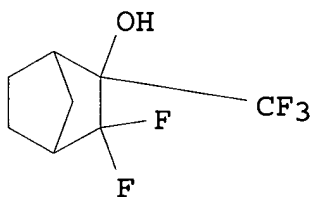
CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(triethoxysilyl)-, 1,1-dimethylethyl ester, polymer with 3,3-difluoro-5(or 6)-(triethoxysilyl)-2-(trifluoromethyl)bicyclo[2.2.1]heptan-2-ol and triethoxymethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 727425-11-8

CMF C14 H23 F5 O4 Si

CCI IDS

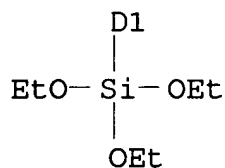
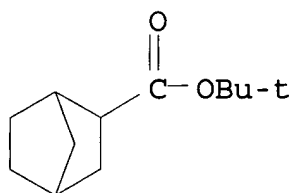


CM 2

CRN 365546-63-0

CMF C18 H34 O5 Si

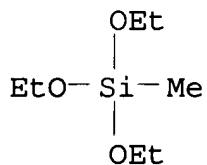
CCI IDS



CM 3

CRN 2031-67-6

CMF C7 H18 O3 Si



- IC ICM C07F007-18  
ICS C07C035-52; C08G077-24; G03F007-039; G03F007-075; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 24, 38
- IT Polysiloxanes, preparation  
**Silsesquioxanes**  
(fluorine-contg.; radiation-sensitive photoresists contg. polysiloxanes bearing fluorinated norbornene groups with good sensitivity, resoln., and dry etching resistance)
- IT Fluoropolymers, preparation  
(**silsesquioxane**-; radiation-sensitive photoresists contg. polysiloxanes bearing fluorinated norbornene groups with good sensitivity, resoln., and dry etching resistance)
- IT 727425-13-0P 727425-14-1P 727425-16-3P **727425-17-4P**  
**727425-19-6P 727425-20-9P** 727425-22-1P  
(radiation-sensitive photoresists contg. polysiloxanes bearing fluorinated norbornene groups with good sensitivity, resoln., and

dry etching resistance)

L70 ANSWER 12 OF 45 HCA COPYRIGHT 2006 ACS on STN

141:148103 Norbornane-based sulfonyl photoacid generators, their intermediates, generated sulfonic acids, and positive- or negative-working radiation-sensitive resists. Ibata, Satoshi; Wang, Yong (JSR Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004210670 A2 20040729, 120 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-380168 20021227.

GI

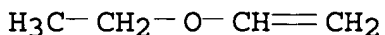
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The photoacid generators have structures I and/or II (R1 = H, monovalent substituent; R2 = monovalent or bivalent substituent; R1OR2 may form ring via other atoms; Y1 = single bond, bivalent linkage; Z1, Z2 = F, C1-10 **perfluoroalkyl**; n = 0-5; p .gtoreq.1; q .gtoreq.0). Preferably, the photoacid generators norbornane-based onium sulfonates or N-sulfonyloximides. The intermediates are halogen-contg. norbornane derivs., norbornane sulfonates, or sulfonyl halides III or IV (R1, R2, Y1, Z1, Z2, n, p, q = same as above; X = Cl, Br, iodide, SO3M, SO2A; M = Na, K, Li; A = halo). The photoacid generators show high combustibility and no accumulation in human body, and resists contg. the generators show good radiation transparency and produce high-resoln. images with small line-edge roughness.

IT 109-92-2DP, Ethyl vinyl ether, reaction product with 4-tert-butoxy styrene-4-hydroxystyrene copolymer (manuf. of norbornane-based sulfonyl photoacid generators for pos.- or neg.-working radiation-sensitive resists)

RN 109-92-2 HCA

CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



IC ICM C07C309-19

ICS C07C309-65; C07C309-66; C07D207-46; C08F002-50; G03F007-004; G03F007-038; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 24

IT **Silsesquioxanes**

(**fluorine**-contg.; manuf. of norbornane-based sulfonyl photoacid generators for pos.- or neg.-working

radiation-sensitive resists)

IT **Fluoropolymers, preparation**

(silsesquioxane-; manuf. of norbornane-based sulfonyl photoacid generators for pos.- or neg.-working radiation-sensitive resists)

IT **109-92-2DP**, Ethyl vinyl ether, reaction product with 4-tert-butoxy styrene-4-hydroxystyrene copolymer 123589-22-0DP, -4-tert-Butoxystyrene-4-hydroxystyrene copolymer, reaction product with Et vinyl ether 187601-74-7DP, tert-Butoxystyrene homopolymer, hydrolyzed 221549-67-3P, 4-Acetoxy styrene-tert-butyl acrylate-styrene copolymer 340964-24-1P 340964-38-7P 406198-64-9P, 4-Acetoxy styrene-4-tert-butoxystyrene-styrene copolymer 428516-13-6P 479628-09-6P 670248-60-9P 690258-42-5P 724776-70-9P

(manuf. of norbornane-based sulfonyl photoacid generators for pos.- or neg.-working radiation-sensitive resists)

L70 ANSWER 13 OF 45 HCA COPYRIGHT 2006 ACS on STN

140:365500 Fluoropolymer resists for 157 nm lithography. Vohra, Vaishali R.; Liu, Xiang-Qian; Douki, Katsuji; Ober, Christopher K.; Conley, Will; Zimmerman, Paul; Miller, Daniel (Department of Materials Science & Engineering, Cornell Univ., Ithaca, NY, 14853, USA). Proceedings of SPIE-The International Society for Optical Engineering, 5039(Pt. 1, Advances in Resist Technology and Processing XX), 539-547 (English) 2003. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Fluoropolymers have been shown to be one of the best materials for high transparency of 157 nm wavelength radiation. Both resists and pellicles are being designed from such materials. One of the authors approaches to improved transparency for 157 nm resists is based upon fluorinated variations of polymethacrylate and polyhydroxystyrene derivs. Lithog. studies were carried out on exptl. resist platforms using 157 and 248 nm steppers, and it was shown that, after selective modification, it is possible to use conventional resist backbones, such as acrylic or styrenic, in the design of single-layer resists for 157 nm lithog. It has been demonstrated in the authors studies that 157 nm absorbance of these materials can be as low as 1.5-2.0 .mu.m-1. Another approach to 157 nm resist design is based upon fluorinated backbone variations. Research will be described focusing on several new monomers having fluorine functions such as -F and -CF3 groups near a polymerizable double bond to improve transparency at 157 nm and to raise the resist glass transition temp. compared to their hydrocarbon analogs. Due to the lower electron d. of the double bond, these monomers can be copolymd. with electron-rich vinyl monomers. As an extension to this strategy, the authors are synthesizing novel fluoropolymers having partially fluorinated monocyclic structures with radical

cyclo-polymn. These polymers have the C-F bond on the polymer main chain and also possess acid labile groups as part of a ring structure to eliminate degassing. In order to further enhance the transparency of these systolic polymers at 157 nm, we have eliminated the carbonyl group. The cyclic nature of the polymer will result in a high glass transition temp.

IT 681235-91-6

(design of fluoropolymers for single-layer chem. amplification photoresists for 157 nm lithog.)

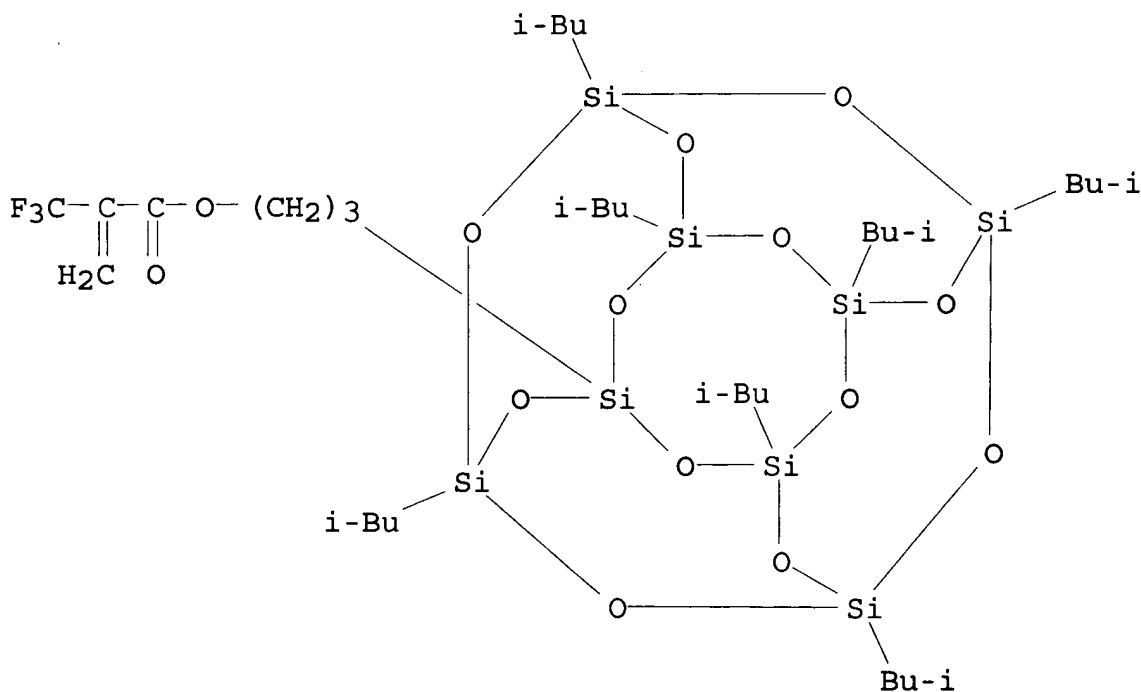
RN 681235-91-6 HCA

CN 2-Propenoic acid, 2-(trifluoromethyl)-, 3-[heptakis(2-methylpropyl)pentacyclo[9.5.1.13,9.15,15.17,13]octasiloxanyl]propyl ester, polymer with 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-(trifluoromethyl)-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 681235-60-9

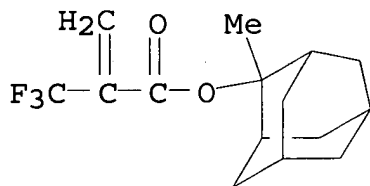
CMF C35 H71 F3 O14 Si8



CM 2

CRN 188739-86-8

CMF C15 H19 F3 O2



- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT **Silsesquioxanes**  
(fluorine-contg.; design and lithog. properties of fluoropolymers for single-layer chem. amplification photoresist formulations for 157 nm exposures)
- IT Fluoropolymers, properties  
(**silsesquioxane**-; design and lithog. properties of fluoropolymers for single-layer chem. amplification photoresist formulations for 157 nm exposures)
- IT **681235-91-6** 681235-95-0  
(design of fluoropolymers for single-layer chem. amplification photoresists for 157 nm lithog.)
- L70 ANSWER 14 OF 45 HCA COPYRIGHT 2006 ACS on STN  
140:165063 Anisotropically conductive films having good storage stability and high adhesion both to silica and to ITO. Hiraoka, Hidetoshi; Sakurai, Ryo; Miura, Akio; Morimura, Yasuhiro (Bridgestone Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2004043725 A2 20040212, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-205799 20020715.
- AB The films, useful for bonding of terminals of display panels and flexible printed circuit boards, are formed from conductive particle-dispersed photocurable resin compns. contg. aliph. unsatd. **sidechain**-contg. poly(vinyl **acetals**) and phosphoryl (meth)acrylates. Thus, a compn. of a reaction product of unsatd. **sidechain**-induced vinyl butyral resin and P1M (phosphoryl methacrylate) 100, (BzO)2 2, Super Beckamine L 125-60 (melamine resin) 5, pentaerythritol tetraacrylate 20, .gamma.-methacryloxypropyltrimethoxysilane 0.5, and 16GNR10MX (conductive particle) 4 parts was pasted on a separator film and dried to give an adhesive film which showed reliable boning of terminal-formed flexible printed circuit boards and good elec. interconnection.
- IT **2530-85-0**, .gamma.-Methacryloxypropyltrimethoxysilane  
(polymerizable coupling agents; storage-stable conductive adhesive films contg. phosphoryl methacrylate-modified vinyl **acetal** resins)
- RN 2530-85-0 HCA  
CN 2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester (9CI)

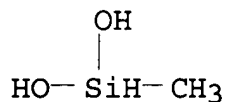
$$\text{Me}-\overset{\text{H}_2\text{C}}{\underset{\parallel}{\text{C}}}-\overset{\text{O}}{\underset{\parallel}{\text{C}}}-\text{O}-(\text{CH}_2)_3-\underset{\text{OMe}}{\overset{\text{OMe}}{\text{Si}}}-\text{OMe}$$

- ICM C09J007-00  
ICS C08F290-12; C08J005-18; C09J009-02; C09J129-14; C09J133-04;  
C09J167-06; H01B001-22; H01B005-16; C08L029-04  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 76  
ST anisotropically electroconductive adhesive film vinyl **acetal**  
; **sidechain** unsatd vinyl **acetal** adhesive  
conductor dispersed; phosphoryl methacrylate reacted vinyl butyral  
adhesive sheet  
IT Films  
(elec. conductive, anisotropic; storage-stable conductive  
adhesive films contg. phosphoryl methacrylate-modified vinyl  
**acetal** resins)  
IT Electric conductors  
(films, anisotropic; storage-stable conductive adhesive films  
contg. phosphoryl methacrylate-modified vinyl **acetal**  
resins)  
IT Adhesives  
(sheets, electroconductive; storage-stable conductive adhesive  
films contg. phosphoryl methacrylate-modified vinyl  
**acetal** resins)  
IT Interconnections, electric  
(storage-stable conductive adhesive films contg. phosphoryl  
methacrylate-modified vinyl **acetal** resins)  
IT Polyvinyl butyrals  
(unsatd. **sidechain**-contg., reaction products with  
phosphoryl methacrylate; storage-stable conductive adhesive films  
contg. phosphoryl methacrylate-modified vinyl **acetal**  
resins)  
IT 50926-11-9, Indium tin oxide  
(adherend surface, terminal electrodes; storage-stable conductive  
adhesive films contg. phosphoryl methacrylate-modified vinyl  
**acetal** resins)  
IT 7631-86-9, Silica, uses  
(adherend surface; storage-stable conductive adhesive films  
contg. phosphoryl methacrylate-modified vinyl **acetal**  
resins)  
IT 655247-90-8, 16G NR10MX  
(conductive particles; storage-stable conductive adhesive films

- contg. phosphoryl methacrylate-modified vinyl **acetal** resins)
- IT 2530-85-0, .gamma.-Methacryloxypropyltrimethoxysilane (polymerizable coupling agents; storage-stable conductive adhesive films contg. phosphoryl methacrylate-modified vinyl **acetal** resins)
- IT 4986-89-4, Pentaerythritol tetraacrylate (storage-stable conductive adhesive films contg. phosphoryl methacrylate-modified vinyl **acetal** resins)
- IT 24599-21-1DP, Light Ester P 1M, reaction products with **sidechain**-unsatd. vinyl butyral resins (unsatd. **sidechain**-contg., reaction products with phosphoryl methacrylate; storage-stable conductive adhesive films contg. phosphoryl methacrylate-modified vinyl **acetal** resins)
- L70 ANSWER 15 OF 45 HCA COPYRIGHT 2006 ACS on STN
- 139:338368 Hydrosilylated alkenal derivatives and their manufacture. Kluge, Michael; Misske, Andrea; Wagner, Norbert (BASF AG, Germany). Ger. Offen. DE 10216233 A1 20031023, 10 pp. (German). CODEN: GWXXBX. APPLICATION: DE 2002-10216233 20020412.
- AB Title derivs., useful as acid-cleavable surfactants, are manuf. by reaction of CH<sub>2</sub>:CR<sub>5</sub>YCH(XR<sub>1</sub>)(XR<sub>2</sub>) [X = O, S, or NH; R<sub>1</sub>, R<sub>2</sub> = (O-, S-, NH-, SO<sub>2</sub>-link-contg.) C<sub>1</sub>-30 alkyl, (O-, S-, NH-, SO<sub>2</sub>-link-contg.) C<sub>1</sub>-30 hydroxyalkyl; C<sub>6</sub>-12 aryl, C<sub>7</sub>-30 alkaryl, or C<sub>7</sub>-30 aralkyl, R<sub>1</sub>R<sub>1</sub> = (CR<sub>3</sub>R<sub>4</sub>)<sub>n</sub>; R<sub>3</sub>, R<sub>4</sub> = H, R<sub>1</sub>, R<sub>2</sub>, or C:O; n = 2-4; Y = single bond or C<sub>1</sub>-30 alkylene; R<sub>5</sub> = H, C<sub>1</sub>-30 alkyl, or Ph] with silanes, siloxanes or their oligomers or polymers contg. .gtoreq.1 SiH in the presence of a hydrosilylation catalyst. A typical deriv. was manufd. by heating hexamethyldisiloxane 73, octamethylcyclotetrasiloxane 771, polymethylhydrosiloxane 156, and CF<sub>3</sub>SO<sub>3</sub>H 0.65 g 6 h at 70.degree. under N, and heating 60.6 g resulting intermediate, 34.8 acrolein **acetal** with trimethylolpropane, 25.3 .mu.L PhCO<sub>2</sub>Na (33% aq. soln.), and 27.2 .mu.L catalyst (7.5% hexachloroplatinic acid in iso-PrOH) 2 h at 80.degree. under N.
- IT 161127-41-9DP, Methylsilanediol-octamethylcyclotetrasiloxane copolymer, trimethylsilyl-terminated, reaction products with acrolein **acetals** (comprised of actual and assumed monomers; hydrosilylated alkenal derivs. of alcs., thiols, or amines for acid-cleavable surfactants)
- RN 161127-41-9 HCA
- CN Silanediol, methyl-, polymer with octamethylcyclotetrasiloxane (9CI) (CA INDEX NAME)

CRN 43641-90-3

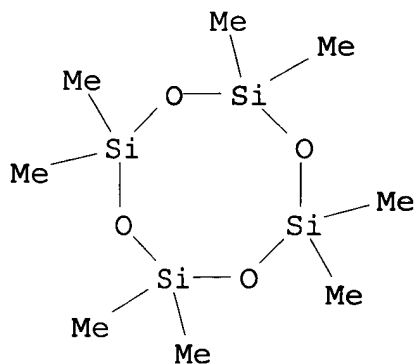
CMF C H6 O2 Si



CM 2

CRN 556-67-2

CMF C8 H24 O4 Si4



IT 615288-99-8P

(hydrosilylated alkenal derivs. of alcs., thiols, or amines for acid-cleavable surfactants)

RN 615288-99-8 HCA

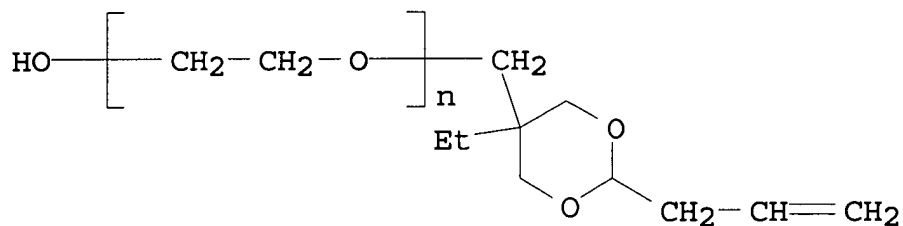
CN Silanediol, methyl-, polymer with .alpha.-[[5-ethyl-2-(2-propenyl)-1,3-dioxan-5-yl]methyl]-.omega.-hydroxypoly(oxy-1,2-ethanediyl) and octamethylcyclotetrasiloxane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 615288-98-7

CMF (C2 H4 O)<sub>n</sub> C10 H18 O3

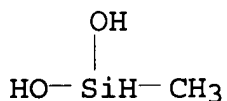
CCI PMS



CM 2

CRN 43641-90-3

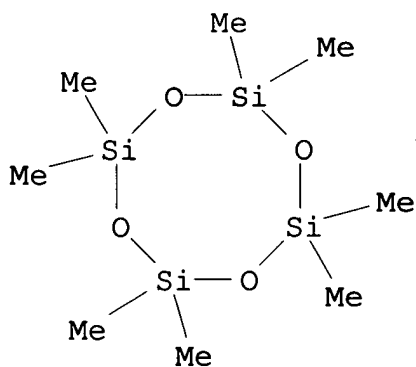
CMF C H6 O2 Si



CM 3

CRN 556-67-2

CMF C8 H24 O4 Si4



IT 615289-00-4P, Ethylene oxide-methylsilanediol-octamethylcyclotetrasiloxane graft copolymer (hydroxy group-contg. acrolein **acetal** linked; hydrosilylated alkenal derivs. of alcs., thiols, or amines for acid-cleavable surfactants)

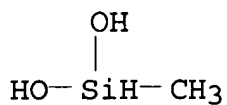
RN 615289-00-4 HCA

CN Silanediol, methyl-, polymer with octamethylcyclotetrasiloxane and oxirane, graft (9CI) (CA INDEX NAME)

CM 1

CRN 43641-90-3

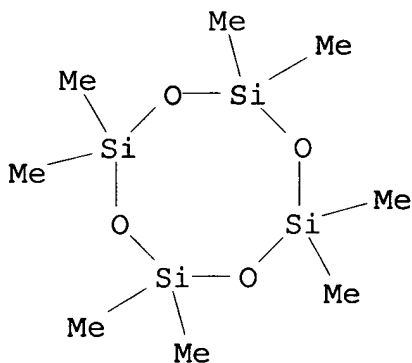
CMF C H6 O2 Si



CM 2

CRN 556-67-2

CMF C8 H24 O4 Si4



CM 3

CRN 75-21-8

CMF C2 H4 O



IC ICM C07F007-18

ICS A61K007-00; C08G077-08

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 29, 46

ST alkenal **acetal** hydrosilylated acid cleavable surfactant;  
 diamine deriv alkenal hydrosilylated acid cleavable surfactant;  
 thioacetal alkenal hydrosilylated acid cleavable surfactant;  
 acrolein trimethylolpropane **acetal** hydrogen siloxane

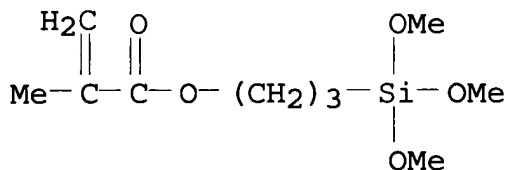
adduct manuf

- IT Polysiloxanes, preparation  
(hydrogen, reaction products, with unsatd. **acetals**;  
hydrosilylated alkenal derivs. of alcs., thiols, or amines for  
acid-cleavable surfactants)
- IT **161127-41-9DP**, Methylsilanediol-octamethylcyclotetrasiloxane  
copolymer, trimethylsilyl-terminated, reaction products with  
acrolein **acetals**  
(comprised of actual and assumed monomers; hydrosilylated alkenal  
derivs. of alcs., thiols, or amines for acid-cleavable  
surfactants)
- IT 1075-97-4DP, Acrolein trimethylolpropane **cyclic**  
**acetal**, reaction products with methylsilanediol-  
octamethylcyclotetrasiloxane copolymer 13260-75-8DP, Acrolein  
neopentyl glycol **cyclic acetal**, reaction  
products with methylsilanediol-octamethylcyclotetrasiloxane  
copolymer **615288-99-8P**  
(hydrosilylated alkenal derivs. of alcs., thiols, or amines for  
acid-cleavable surfactants)
- IT **615289-00-4P**, Ethylene oxide-methylsilanediol-  
octamethylcyclotetrasiloxane graft copolymer  
(hydroxy group-contg. acrolein **acetal** linked;  
hydrosilylated alkenal derivs. of alcs., thiols, or amines for  
acid-cleavable surfactants)

L70 ANSWER 16 OF 45 HCA COPYRIGHT 2006 ACS on STN

- 139:70181 Modified poly(vinyl **acetal**) composition for glass  
lamine intermediate film. Inamiya, Takato; Kotsubo, Shuji;  
Sakurai, Ryo; Morimura, Yasuhiro (Bridgestone Corp., Japan). Jpn.  
Kokai Tokyo Koho JP 2003183059 A2 **20030703**, 6 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-379456 20011213.
- AB The compn. giving moisture-, heat-, and penetration-resistant  
laminated glass for windows of automobiles, aircraft, buildings,  
etc., contains plasticizers and modified poly(vinyl **acetals**  
) obtained by acetalizing poly(vinyl alc.) and then introducing  
hydrolyzable groups to the **side chains** of the  
resulting poly(vinyl **acetals**). The intermediate film as a  
sheet of the compn., and laminated glass using the sheet are also  
claimed. Thus, a mixt. contg. .gamma.-isocyanatopropyltriethoxysila  
ne-modified polyvinyl butyral, triethylene glycol-bis(2-  
ethylhexanate), and additives was pressed to give a sheet, which was  
sandwiched between glass sheets and hot-pressed to give a laminate  
showing high heat resistance.
- IT **2530-85-0**, KBM 503  
(coupling agent, film contg.; hydrolyzable group-modified  
polyvinyl **acetal** blend for intermediate film of  
moisture-, heat-, and penetration-resistant glass laminate)
- RN 2530-85-0 HCA

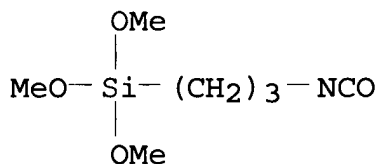
CN 2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester (9CI)  
(CA INDEX NAME)



IT 15396-00-6D, .gamma.-Isocyanatopropyltrimethoxysilane,  
reaction products with polyvinyl butyrals 24801-88-5D,  
.gamma.-Isocyanatopropyltriethoxysilane, reaction products with  
polyvinyl butyrals  
(hydrolyzable group-modified polyvinyl **acetal** blend for  
intermediate film of moisture-, heat-, and penetration-resistant  
glass laminate)

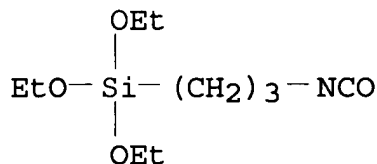
RN 15396-00-6 HCA

CN Silane, (3-isocyanatopropyl)trimethoxy- (9CI) (CA INDEX NAME)



RN 24801-88-5 HCA

CN Silane, triethoxy(3-isocyanatopropyl)- (9CI) (CA INDEX NAME)



IC ICM C03C027-12

ICS B60J001-00; B64C001-14

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 57

ST glass laminate hydrolyzable group modified polyvinyl **acetal**  
; light fastness laminated glass intermediate film; benzoyl peroxide  
curing intermediate film laminate glass; benzophenone UV absorber  
intermediate film laminate glass; triallyl isocyanurate crosslinking  
intermediate film laminate glass

IT Polyvinyl butyrals

(ethoxysilyl- or methoxysilyl-introduced; hydrolyzable

group-modified polyvinyl **acetal** blend for intermediate film of moisture-, heat-, and penetration-resistant glass laminate)

IT Plasticizers

(hydrolyzable group-modified polyvinyl **acetal** blend for intermediate film of moisture-, heat-, and penetration-resistant glass laminate)

IT Laminated glass

Laminated plastics, uses

(hydrolyzable group-modified polyvinyl **acetal** blend for intermediate film of moisture-, heat-, and penetration-resistant glass laminate)

IT Windows

(laminated glass for; hydrolyzable group-modified polyvinyl **acetal** blend for intermediate film of moisture-, heat-, and penetration-resistant glass laminate)

IT 2530-85-0, KBM 503

(coupling agent, film contg.; hydrolyzable group-modified polyvinyl **acetal** blend for intermediate film of moisture-, heat-, and penetration-resistant glass laminate)

IT 1025-15-6, TAIC 50815-42-4, Neopentyl glycol acrylate

(film contg.; hydrolyzable group-modified polyvinyl **acetal** blend for intermediate film of moisture-, heat-, and penetration-resistant glass laminate)

IT 15396-00-6D, .gamma.-Isocyanatopropyltrimethoxysilane, reaction products with polyvinyl butyrals 24801-88-5D, .gamma.-Isocyanatopropyltriethoxysilane, reaction products with polyvinyl butyrals

(hydrolyzable group-modified polyvinyl **acetal** blend for intermediate film of moisture-, heat-, and penetration-resistant glass laminate)

IT 94-28-0

(plasticizer, film contg.; hydrolyzable group-modified polyvinyl **acetal** blend for intermediate film of moisture-, heat-, and penetration-resistant glass laminate)

L70 ANSWER 17 OF 45 HCA COPYRIGHT 2006 ACS on STN

139:60263 Application of blends and **side chain** Si-O

copolymers as high-etch-resistant sub-100-nm electron-beam resists. Huang, Wu-Song; Kwong, Ranee W.; Moreau, Wayne M.; Lang, Robert; Medeiros, David R.; Petrillo, Karen E.; Mahorowala, Arpan P.; Angelopoulos, Marie; Lin, Qinghuang; Dai, Junyan; Ober, Christopher Kemper (IBM Microelectronics Div., Hopewell Junction, NY, 12533, USA). Proceedings of SPIE-The International Society for Optical Engineering, 4690(Pt. 1, Advances in Resist Technology and Processing XIX), 432-441 (English) 2002. CODEN: PSISDG. ISSN: 0277-786X. Publisher: SPIE-The International Society for Optical Engineering.

AB Recently, there is a significant interest in using chem. amplified (CA) resists for electron-beam (E-Beam) applications including mask making, direct write, and projection printing. CA resists provide superior lithog. performance in comparison to traditional non CA E-beam resists in particular high contrast, resoln., and sensitivity. Due to the electron scattering effect and the image collapse problem, thinner imaging layer is desirable. Sufficient etch selectivity is needed to compensate reduced resist thickness. Therefore, there is a need to have a high etch resistant resist system which can survive Cr etch (Cl<sub>2</sub>/O<sub>2</sub> RIE etchant) process in mask making. For device making, the thin film bilayer approach needs a resist that can withstand O<sub>2</sub> etch for image transfer to the underlayer. The authors found Si-O contg. polymer has the etch characteristics for both applications. In the first approach, using a blend of KRS-XE and silsesquioxane polymer, the authors have been able to resolve resist images down to 50 nm with etch rate 20% slower than conventional novolak I-line resist systems. In the second approach, we have investigated the copolymer of vinylphenol and acrylate siloxysilane systems. Superior litho performance and etch properties have been obsd. In this presentation, the authors discuss the chem., the miscibility in blends, etch characteristics and lithog. performance of these resist systems.

IT 547757-38-0DP, hydrolyzed, partially protected with ketal groups

(etch resistant chem. amplified electron-beam resists based on copolymer of vinylphenol and acrylate siloxysilane)

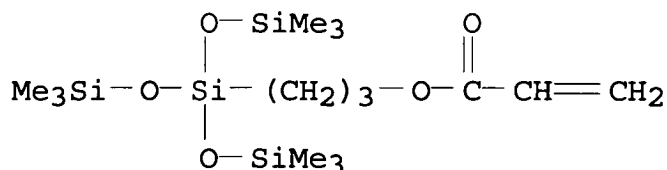
RN 547757-38-0 HCA

CN 2-Propenoic acid, 3-[3,3,3-trimethyl-1,1-bis[(trimethylsilyl)oxy]disiloxanyl]propyl ester, polymer with 4-ethenylphenyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 17096-12-7

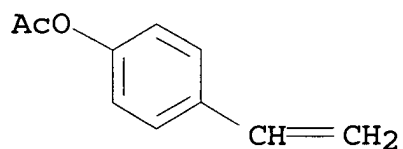
CMF C15 H36 O5 Si4



CM 2

CRN 2628-16-2

CMF C10 H10 O2

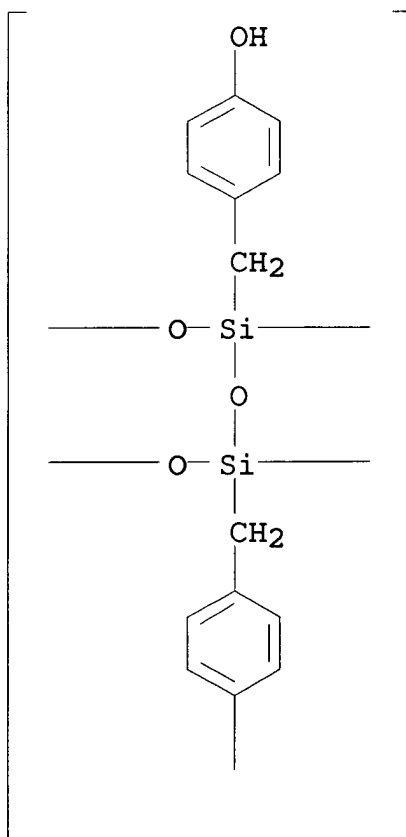


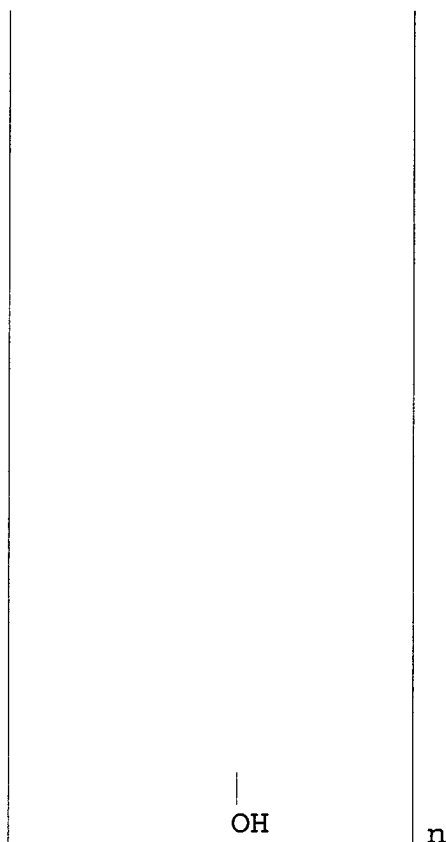
IT **188629-68-7D**, partially protected  
 (lithog. performance of high-etch-resistant sub-100-nm chem.  
 amplification electron-beam resist contg. blend of KRS-XE resist  
 and hydroxybenzylsilsesquioxane polymer)

RN 188629-68-7 HCA

CN Poly[[1,3-bis[(4-hydroxyphenyl)methyl]-1,3:1,3-disiloxanediylidene]-  
 1,3-bis(oxy)] (9CI) (CA INDEX NAME)

PAGE 1-A





PAGE 2-A

- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
- IT Electron beam resists  
(chem. amplification; etch resistant chem. amplified electron-beam resists based either on KRS-XE resist and hydroxybenzylsilsesquioxane polymer blends or **side chain** Si-O copolymers)
- IT Photomasks (lithographic masks)  
(etch resistant chem. amplified electron-beam resists based either on KRS-XE resist and hydroxybenzylsilsesquioxane polymer blends or **side chain** Si-O copolymers)
- IT Etching  
(plasma; etch resistance of chem. amplified electron-beam resists based either on KRS-XE resist and hydroxybenzylsilsesquioxane polymer blends or **side chain** Si-O copolymers)
- IT **547757-38-0DP**, hydrolyzed, partially protected with **ketal** groups  
(etch resistant chem. amplified electron-beam resists based on copolymer of vinylphenol and acrylate siloxysilane)
- IT **188629-68-7D**, partially protected 302353-92-0, KRS-XE  
(lithog. performance of high-etch-resistant sub-100-nm chem.)

amplification electron-beam resist contg. blend of KRS-XE resist and hydroxybenzylsilsesquioxane polymer)

IT 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses (plasma etch; etch resistance of chem. amplified electron-beam resists based either on KRS-XE resist and hydroxybenzylsilsesquioxane polymer blends or **side chain** Si-O copolymers)

L70 ANSWER 18 OF 45 HCA COPYRIGHT 2006 ACS on STN

138:205431 Study of photocrosslinkable polysiloxanes bearing gem di-styrenyl groups Synthesis and thermal properties. Abdellah, L.; Boutevin, B.; Caporiccio, G.; Guida-Pietrasanta, F. (Faculte des Sciences, Universite Hassan II Ain Chock, Casablanca, Morocco). European Polymer Journal, Volume Date 2003, 39(1), 49-56 (English) 2002. CODEN: EUPJAG. ISSN: 0014-3057. Publisher: Elsevier Science Ltd..

AB The synthesis of photocrosslinkable polysiloxanes contg. gem di-oxaalkylene styrenyl groups and gem di-urethane-.alpha.-Me styrenyl groups has been performed by copolycondensation of .alpha.,.omega.-dihydroxy polydimethyl siloxanes and dichlorosilanes bearing either **cyclic acetal** groups or Si-H groups (onto which the **cyclic acetal** groups are further added) and dichlorosilanes bearing alkyl groups. The introduction of styrenyl groups was then achieved by hydrolysis of the **acetal** groups into the corresponding alcs. followed by reaction with chloromethyl styrene or with 3-isopropenyl-.alpha.,.alpha.-dimethylbenzyl isocyanate. The structure of the different products synthesized was detd. by IR, 1H, 13C and 29Si NMR spectroscopies. The thermal properties of the polysiloxanes bearing gem di-styrenyl groups have been studied at low and high temps. These products have been crosslinked under UV, in the presence of a cationic photoinitiator, and showed very good release paper properties.

IT 500225-85-4DP, **cyclic acetal**-terminated  
500225-86-5DP, **cyclic acetal**-terminated  
(intermediate; prepn. and thermal properties of photocrosslinkable polysiloxanes bearing gem di-styrenyl groups)

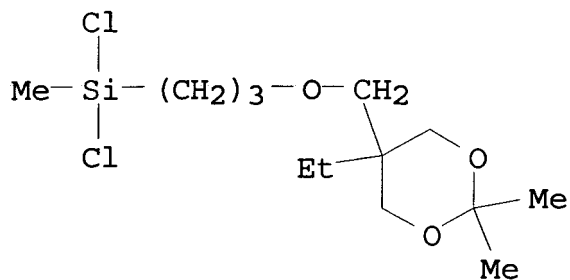
RN 500225-85-4 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-hydro-.omega.-hydroxy-, polymer with dichlorododecylmethylsilane and dichloro[3-[(5-ethyl-2,2-dimethyl-1,3-dioxan-5-yl)methoxy]propyl]methylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 500225-83-2

CMF C13 H26 Cl2 O3 Si

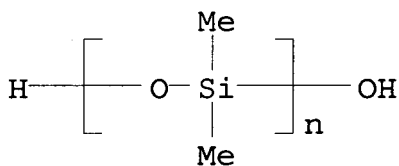


CM 2

CRN 31692-79-2

CMF (C2 H6 O Si)<sub>n</sub> H2 O

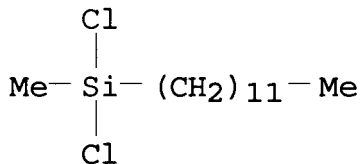
CCI PMS



CM 3

CRN 18407-07-3

CMF C13 H28 Cl2 Si



RN 500225-86-5 HCA

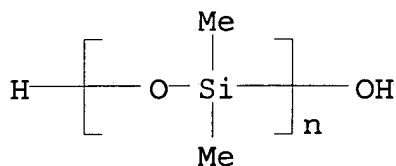
CN Poly[oxy(dimethylsilylene)], .alpha.-hydro-.omega.-hydroxy-, polymer  
with dichlorododecylmethyilsilane and dichloromethylsilane (9CI) (CA  
INDEX NAME)

CM 1

CRN 31692-79-2

CMF (C2 H6 O Si)<sub>n</sub> H2 O

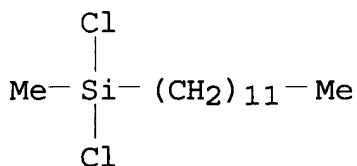
CCI PMS



CM 2

CRN 18407-07-3

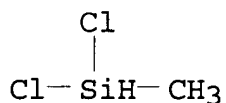
CMF C13 H28 Cl2 Si



CM 3

CRN 75-54-7

CMF C H4 Cl2 Si



IT 500225-85-4DP, **cyclic acetal**-terminated, hydrolyzed, reaction products with chloromethylstyrene or isopropenyldimethylbenzyl isocyanate 500225-86-5DP, **cyclic acetal**-terminated, hydrolyzed, reaction products with chloromethylstyrene or isopropenyldimethylbenzyl isocyanate

(prepn. and thermal properties of photocrosslinkable polysiloxanes bearing gem di-styrenyl groups)

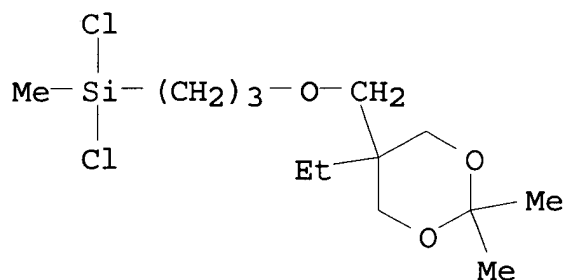
RN 500225-85-4 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-hydro-.omega.-hydroxy-, polymer with dichlorododecylmethylsilane and dichloro[3-[(5-ethyl-2,2-dimethyl-1,3-dioxan-5-yl)methoxy]propyl]methylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 500225-83-2

CMF C13 H26 Cl2 O3 Si

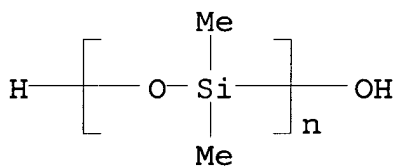


CM 2

CRN 31692-79-2

CMF (C2 H6 O Si)<sub>n</sub> H2 O

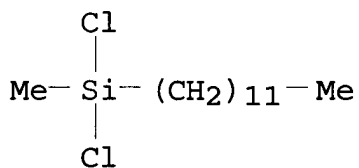
CCI PMS



CM 3

CRN 18407-07-3

CMF C13 H28 Cl2 Si



RN 500225-86-5 HCA

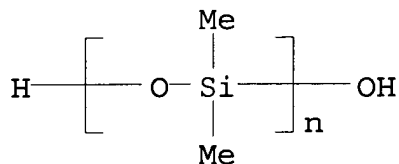
CN Poly[oxy(dimethylsilylene)], .alpha.-hydro-.omega.-hydroxy-, polymer with dichlorododecylmethylsilane and dichloromethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 31692-79-2

CMF (C2 H6 O Si)<sub>n</sub> H2 O

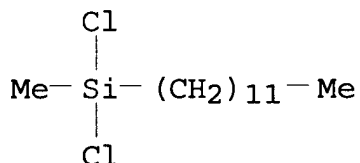
CCI PMS



CM 2

CRN 18407-07-3

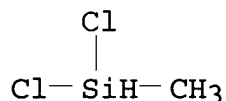
CMF C13 H28 Cl2 Si



CM 3

CRN 75-54-7

CMF C H4 Cl2 Si



CC 35-6 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

IT 768-33-2DP, Chlorodimethylphenylsilane, reaction products with polysiloxanes 1066-35-9DP, Chlorodimethylsilane, reaction products with polysiloxanes 20761-68-6P 107388-12-5DP, reaction products with polysiloxanes 107388-12-5P 500225-83-2P 500225-84-3DP, reaction products with polysiloxanes 500225-84-3P  
**500225-85-4DP, cyclic acetal-terminated**  
**500225-86-5DP, cyclic acetal-terminated**  
 (intermediate; prepn. and thermal properties of photocrosslinkable polysiloxanes bearing gem di-styrenyl groups)

IT 1592-20-7DP, 4-Chloromethylstyrene, reaction products with polysiloxanes 2094-99-7DP, 3-Isopropenyl-.alpha.,.alpha.-dimethylbenzyl isocyanate, reaction products with polysiloxanes **500225-85-4DP, cyclic acetal-terminated,**

hydrolyzed, reaction products with chloromethylstyrene or isopropenyldimethylbenzyl isocyanate **500225-86-5DP**, **cyclic acetal**-terminated, hydrolyzed, reaction products with chloromethylstyrene or isopropenyldimethylbenzyl isocyanate

(prepn. and thermal properties of photocrosslinkable polysiloxanes bearing gem di-styrenyl groups)

L70 ANSWER 19 OF 45 HCA COPYRIGHT 2006 ACS on STN

138:56869 **Fluoro**-functional acid generators and acid generator-containing radiation-sensitive resin compositions suitable for lithography. Ebata, Satoshi; Yoneda, Eiji; Nagai, Tomoki; Toneri, Tatsuya; Wang, Yong; Iwasawa, Haruo; Nishimura, Yukio (JSR Corporation, Japan). Eur. Pat. Appl. EP 1270553 A2 **20030102**, 100 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR. (English). CODEN: EPXXDW. APPLICATION: EP 2002-14416 20020628. PRIORITY: JP 2001-200154 20010629; JP 2001-371311 20011205; JP 2002-81235 20020322.

AB An acid generator has the general structure R-C(Z1)(Z2)-SO<sub>2</sub>-, where R is a monovalent org. group with **fluorine** content .ltoreq. 50%, a nitro group, a cyano group or hydrogen, Z1 and Z2 are independently **fluorine** or a linear or branched C1-C10-**perfluoroalkyl** group. The acid generators can have the following structures R-C(F)(F)-SO<sub>2</sub>-, R-C(F)(CF<sub>3</sub>)-SO<sub>2</sub>-, R-C(CF<sub>3</sub>)(CF<sub>3</sub>)-SO<sub>2</sub>-, and can be in the form of onium salts or N-sulfonyloxyimides. The acid generators are used in pos.-tone or neg.-tone radiation-sensitive resin compns. based on an alkali-sol. resin comprising an acid-cleavable group, the resin being sol. in alkali when the acid-cleavable group dissocs. Thus, 1,4-butylene-(1-n-butoxynaphthalen-4-yl)sulfonium 1,1,2,2-tetrafluoro-2-(norboman-2-yl)ethane sulfonate was produced

generator in a compn. comprising styrene-styrene copolymer, position controller and Et lactate

reaction products with polymer resin; **fluoro**-functional generator-contg. radiation-sensitive lithog.)

EX NAME)

ICS C07C311-00; G03F007-004

CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 23, 74

ST **fluoro** sulfonic acid generator radiation sensitive resin  
compn

IT **Silsesquioxanes**  
(acid-cleavable group-contg. resins; **fluoro**-functional  
acid generators and acid generator-contg. radiation-sensitive  
resin compns. suitable for lithog.)

IT Lithography  
(**fluoro**-functional acid generators and acid  
generator-contg. radiation-sensitive resin compns. suitable for)

IT Sulfonic acids, processes  
(**fluoro**-functional acid generators and acid  
generator-contg. radiation-sensitive resin compns. suitable for  
lithog.)

IT Resists  
(radiation-sensitive; **fluoro**-functional acid generators  
and acid generator-contg. radiation-sensitive resin compns.  
suitable for lithog.)

IT Sulfonic acids, preparation  
(salts, onium salts; **fluoro**-functional acid generators  
and acid generator-contg. radiation-sensitive resin compns.  
suitable for lithog.)

IT 474516-38-6P 479628-12-1P 479628-13-2P 479628-14-3P  
479628-16-5P 479628-17-6P 479628-19-8P 479628-20-1P  
(acid generator; **fluoro**-functional acid generators and  
acid generator-contg. radiation-sensitive resin compns. suitable  
for lithog.)

IT **109-92-2DP**, Ethyl vinyl ether, reaction products with  
butoxystyrene-hydroxystyrene copolymer 95418-60-3DP,  
p-tert-Butoxystyrene homopolymer, hydrolyzed 123589-22-0DP,  
p-tert-Butoxystyrene-p-hydroxystyrene copolymer, reaction products  
with Et vinyl ether 147625-42-1P 221549-67-3DP,  
p-Acetoxystyrene-tert-butyl acrylate-styrene copolymer, hydrolyzed  
330576-44-8P 340964-24-1P 340964-31-0P 340964-38-7P  
364736-20-9P 406198-64-9DP, p-Acetoxystyrene-p-tert-butoxystyrene-  
styrene copolymer, hydrolyzed 479628-08-5P 479628-09-6P  
(acid-cleavable group-contg. resin; **fluoro**-functional  
acid generators and acid generator-contg. radiation-sensitive  
resin compns. suitable for lithog.)

IT 77-73-6, Dicyclopentadiene 542-92-7, Cyclopentadiene, reactions  
680-15-9 1483-72-3, Diphenyliodonium chloride 1600-44-8,  
Tetramethylene sulfoxide 4270-70-6, Triphenylsulfonium chloride  
7775-14-6, Sodium dithionite 18599-22-9 20900-19-0,  
1-Butoxynaphthalene 21715-90-2, N-Hydroxy-5-norbornene-2,3-  
dicarboximide 61358-24-5, Bis(4-tert-butylphenyl)iodonium hydrogen  
sulfate 479628-18-7

(in prodn. of **fluoro**-functional acid generators used in radiation-sensitive resin compns. suitable for lithog.)

IT 144-55-8, Sodium hydrogen carbonate, reactions 1333-74-0, Hydrogen, reactions 7722-84-1, Hydrogen peroxide, reactions 7782-50-5, Chlorine, reactions  
(in prodn. of **fluoro**-functional acid generators used in radiation-sensitive resin compns. suitable for lithog.)

L70 ANSWER 20 OF 45 HCA COPYRIGHT 2006 ACS on STN  
138:39609 Synthesis and large scale fractionation of non-linear polymers: brushes and hyperbranched polymers. Hugenberg, N.; Loske, St.; Muller, A. H. E.; Scharlt, W.; Schmidt, M.; Simon, P. F. W.; Strack, A.; Wolf, B. A. (Johannes Gutenberg-Universitaet, Institut fur Physikalische Chemie, Universitat Mainz, Mainz, D-55099, Germany). Journal of Non-Crystalline Solids, 307-310, 765-771 (English) 2002. CODEN: JNCSBJ. ISSN: 0022-3093. Publisher: Elsevier Science B.V..

AB Polymer brushes with poly(Me methacrylate) (PMMA) backbone and polystyrene **side chains** were synthesized by radical polymn. of .omega.-methacryloyl-polystyrene macromonomers. Hyperbranched PMMA was obtained by means of self-condensing group transfer copolymn. of Me methacrylate with an initiator-monomer contg. a polymerizable methacryloyl moiety and an initiating silyl ketene **acetal** function. Both non-linear products were fractionated using the method of continuous polymer fractionation, consisting in a particular type of continuous countercurrent extn. The combination of Me Et ketone (solvent) with acetone (AC) (precipitant) turned out to be suitable for the fractionation of the polymer brushes; in case of the hyperbranched material AC served as the solvent component and methanol as the precipitant. The achieved fractionation was checked by means of GPC measurements and in case of the polymer brushes also by AFM, where the differences in the size of the macromols. became clearly visible.

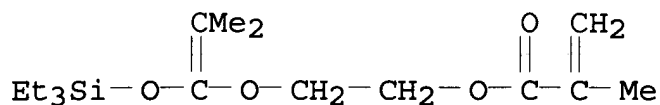
IT 188772-21-6P  
(synthesis and large scale fractionation of nonlinear polymer brushes and hyperbranched polymers)

RN 188772-21-6 HCA

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with 2-[[2-methyl-1-[(triethylsilyl)oxy]-1-propenyl]oxy]ethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

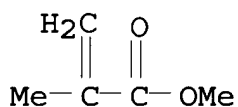
CRN 158362-22-2  
CMF C16 H30 O4 Si



CM 2

CRN 80-62-6

CMF C5 H8 O2



CC 35-4 (Chemistry of Synthetic High Polymers)

IT 188772-21-6P

(synthesis and large scale fractionation of nonlinear polymer brushes and hyperbranched polymers)

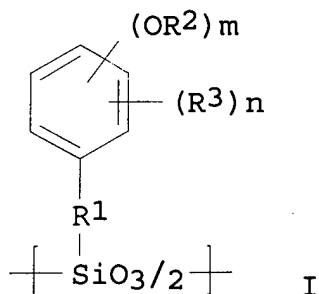
L70 ANSWER 21 OF 45 HCA COPYRIGHT 2006 ACS on STN

137:391071 **Fluorinated** phenol-containing**polysilsesquioxanes**, their transparent, dry

etching-resistant resist materials, and their patterning.

Hatakeyama, Jun; Takahashi, Toshiaki; Watanabe, Atsushi; Ishihara, Toshinobu; Sasako, Masaru; Endo, Masataka; Kishimura, Shinji; Otani, Michitaka; Miyazawa, Satoru; Tsutsumi, Kentaro (Shin-Etsu Chemical Industry Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.; Central Glass Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 2002338690 A2 **20021127**, 28 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-140211 20010510. PRIORITY: JP 2001-70179 20010313.

GI



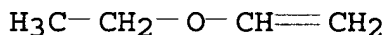
AB The **polysilsesquioxanes** for the resist materials have repeating units represented by the general formula I (R1 = single bond, C1-10 linear, branched, or cyclic hydrocarbylene which may be bridged; R2 = acid-labile group; R3 = F, C1-10 linear, branched, or cyclic **fluorinated** alkyl; m = 1-3, n = 1-4, m + n .ltoreq.

5). Chem. amplified resist materials contain the **polysilsesquioxanes**, org. solvents, acid generators, and optionally basic compds. and dissoln. inhibitors. The patterning involves (i) application of resist materials on substrates, (ii) heating and exposure to .ltoreq.300-nm high-energy ray or electron beam via photomasks, (iii) post bake if necessary, and development, and optionally (iv) O plasma etching for processing of underlayers, and (v) Cl- or Br-contg. halogen gas etching for processing of underlayers. The resist materials have excellent transparency to vacuum UV such as F2, Kr2, KrAr, and Ar2 and high dry etching resistance, and give fine and vertical patterns.

IT **109-92-2DP**, Ethyl vinyl ether, reaction products with 2,3-difluoro-4-hydroxybenzylsilsesquioxane  
(**fluorinated** phenol-contg. **polysilsesquioxanes**  
for pos. chem. amplified resists having good transparency of vacuum UV)

RN 109-92-2 HCA

CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



IC ICM C08G077-24

ICS C08K005-00; C08L083-08; G03F007-039; G03F007-40; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37, 38

ST **fluorinated** phenol **polysilsesquioxane** chem amplified resist; hydroxystyrene **fluorinated polysilsesquioxane** chem amplified resist; vacuum UV resist **fluorinated** phenol **polysilsesquioxane**; pos photoresist **fluorinated** phenol **polysilsesquioxane**; plasma etching resistance **fluorinated** hydroxystyrene **polysilsesquioxane**

IT Positive photoresists

(**fluorinated** phenol-contg. **polysilsesquioxanes**  
for pos. chem. amplified resists having good transparency of vacuum UV)

IT Polycarbonates, uses

(**fluorine**-contg., dissoln. inhibitor;  
**fluorinated** phenol-contg. **polysilsesquioxanes**

for pos. chem. amplified resists having good transparency of vacuum UV)

IT **Silsesquioxanes**

(fluorine-contg.; fluorinated phenol-contg. polysilsesquioxanes for pos. chem. amplified resists having good transparency of vacuum UV)

IT **Fluoropolymers, uses**

(polycarbonate-, dissoln. inhibitor; fluorinated phenol-contg. polysilsesquioxanes for pos. chem. amplified resists having good transparency of vacuum UV)

IT **Fluoropolymers, preparation**

(silsesquioxane-; fluorinated phenol-contg. polysilsesquioxanes for pos. chem. amplified resists having good transparency of vacuum UV)

IT 102-71-6, Triethanolamine, uses 102-82-9, Tributylamine 211919-60-7

(base; fluorinated phenol-contg. polysilsesquioxanes for pos. chem. amplified resists having good transparency of vacuum UV)

IT 31563-79-8, Hexafluorobisphenol A-carbonic acid copolymer 32291-26-2

(dissoln. inhibitor; fluorinated phenol-contg. polysilsesquioxanes for pos. chem. amplified resists having good transparency of vacuum UV)

IT 109-92-2DP, Ethyl vinyl ether, reaction products with 2,3-difluoro-4-hydroxybenzylsilsesquioxane

3891-33-6DP, 1,4-Butanediol divinyl ether, reaction products with Et vinyl ether-modified 2,3-difluoro-4-

hydroxybenzylsilsesquioxane 24424-99-5DP, Di-tert-butyl dicarbonate, ester with hydrolyzed 2,3-difluoro-4-meth-2-

oxybenzylsilsesquioxane 476360-32-4DP, ester with di-tert-Bu dicarbonate 476360-32-4DP, hydrolyzed, reaction

products with Et vinyl ether 476360-32-4P 476360-33-5DP, hydrolyzed, reaction products with Et vinyl ether or t-Bu carbonate

476360-33-5DP, hydrolyzed, reaction products with Et vinyl ether or tert-Bu carbonate 476360-33-5P 476360-35-7DP, hydrolyzed,

reaction products with Et vinyl ether 476360-35-7P 476360-36-8DP, hydrolyzed, reaction products with Et vinyl ether

476360-36-8P

(fluorinated phenol-contg. polysilsesquioxanes for pos. chem. amplified resists having good transparency of vacuum UV)

IT 476360-30-2

(monomer prepn. from; fluorinated phenol-contg. polysilsesquioxanes for pos. chem. amplified resists having good transparency of vacuum UV)

IT 476360-31-3P

(monomer; fluorinated phenol-contg.

**polysilsesquioxanes** for pos. chem. amplified resists  
having good transparency of vacuum UV)

IT 66003-76-7, Diphenyliodonium triflate 66003-78-9,  
Triphenylsulfonium triflate

(photoacid generator; **fluorinated** phenol-contg.

**polysilsesquioxanes** for pos. chem. amplified resists  
having good transparency of vacuum UV)

L70 ANSWER 22 OF 45 HCA COPYRIGHT 2006 ACS on STN

136:254552 Chemically amplified positive photoresist compositions with  
good oxygen plasma resistance and reduced edge roughness for high  
resolution patterns. Mizutani, Kazuyoshi (Fuji Photo Film Co.,  
Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002082437 A2  
20020322, 33 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
JP 2000-270090 20000906.

AB The pos. photoresist compns., useful for an upper layer of a  
two-layered resist, etc., contain acid-decomposable polysiloxanes  
comprising a repeating unit  $\text{Si}[(\text{CH}_2)_n\text{L}_1\text{M}_1\text{CO}_2\text{Q}]_{0.5}$  ( $\text{L}_1 = \text{AOCO}, \text{ACO}_2$ ,  
 $\text{ANHCO}, \text{AS}$ , etc.;  $\text{A}, \text{M}_1 =$  single linkage, arylene, divalent or  
bridged alicyclic group;  $n = 1-6$ ;  $\text{Q} = \text{H}$ , acid-decomposable group  
generating carboxylic acid).

IT 404339-81-7

(**silsesquioxane**-based chem. amplified pos. photoresists  
with good oxygen plasma resistance and reduced edge roughness)

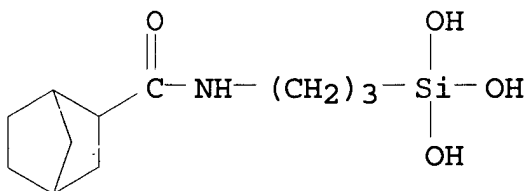
RN 404339-81-7 HCA

CN Cyclohexanecarboxylic acid, 2-[[[3-(trihydroxysilyl)propyl]amino]car  
bonyl]-, 1-methylcyclohexyl ester, polymer with silicic acid  
( $\text{H}_4\text{SiO}_4$ ) and N-[3-(trihydroxysilyl)propyl]bicyclo[2.2.1]heptane-2-  
carboxamide (9CI) (CA INDEX NAME)

CM 1

CRN 404339-80-6

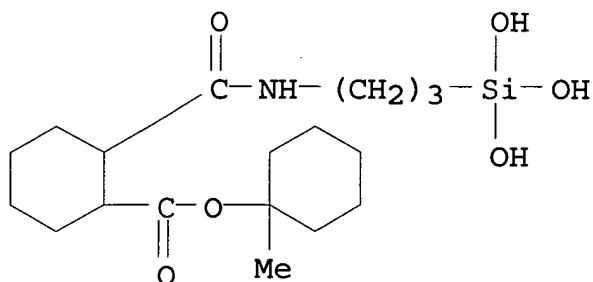
CMF C11 H21 N O4 Si



CM 2

CRN 404339-79-3

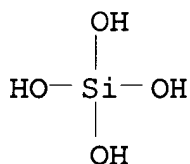
CMF C18 H33 N O6 Si



CM 3

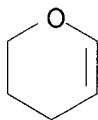
CRN 10193-36-9

CMF H4 O4 Si

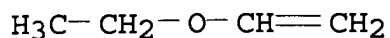


- IC ICM G03F007-039  
ICS C08G077-04; C08K005-00; C08L083-04; G03F007-004; G03F007-075;  
H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 76
- ST pos photoresist chem amplification **silsesquioxane**; edge  
roughness redn **silsesquioxane** pos photoresist; oxygen  
plasma resistance chem amplification photoresist
- IT **Silsesquioxanes**  
(silicate-; **silsesquioxane**-based chem. amplified pos.  
photoresists with good oxygen plasma resistance and reduced edge  
roughness)
- IT Silicates, preparation  
(**silsesquioxane**-; **silsesquioxane**-based chem.  
amplified pos. photoresists with good oxygen plasma resistance  
and reduced edge roughness)
- IT Positive photoresists  
(**silsesquioxane**-based chem. amplified pos. photoresists  
with good oxygen plasma resistance and reduced edge roughness)
- IT **Silsesquioxanes**  
(**silsesquioxane**-based chem. amplified pos. photoresists  
with good oxygen plasma resistance and reduced edge roughness)
- IT 76198-01-1P 404339-68-0P

- (**silsesquioxane**-based chem. amplified pos. photoresists with good oxygen plasma resistance and reduced edge roughness)
- IT 404339-69-1DP, hydrogenated 404339-70-4DP, hydrogenated, tetrahydropyranyl ester 404339-71-5DP, hydrogenated, tetrahydropyranyl ester
- (**silsesquioxane**-based chem. amplified pos. photoresists with good oxygen plasma resistance and reduced edge roughness)
- IT 25512-39-4, Chloropropyltrimethoxysilane
- (**silsesquioxane**-based chem. amplified pos. photoresists with good oxygen plasma resistance and reduced edge roughness)
- IT 404339-74-8 404339-76-0 404339-78-2 **404339-81-7**
- (**silsesquioxane**-based chem. amplified pos. photoresists with good oxygen plasma resistance and reduced edge roughness)
- L70 ANSWER 23 OF 45 HCA COPYRIGHT 2006 ACS on STN
- 136:158839 Polymers, resist compositions and patterning process. Hatakeyama, Jun; Takahashi, Toshiaki; Ishihara, Toshinobu; Watanabe, Jun; Kubota, Tohru; Kawai, Yoshio (Shin-Etsu Chemical Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2002012871 A1 **20020131**, 23 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-870745 20010601. PRIORITY: JP 2000-165884 20000602; JP 2000-165895 20000602.
- AB The present invention relates to polymers comprising recurring units of  $\text{CH}(3-m)\text{Fm}(\text{OR})\text{CH}(3-n)\text{FnCH-R1}-(\text{SiO}_3/2)$  ( $\text{R1}$  = straight, branched or cyclic divalent  $\text{C1-20}$  hydrocarbon group or a bridged cyclic hydrocarbon group;  $\text{R} = \text{H}$ , acid labile group;  $0.\text{ltoreq.m.litoreq.3}$ ,  $0.\text{ltoreq.n.litoreq.3}$  and  $0.\text{ltoreq.m+n.litoreq.6}$ ). Using the polymers, chem. amplification pos. resist compns. featuring low absorption of  $\text{F2}$  excimer laser light are obtained.
- IT **110-87-2DP**, 3,4-Dihydro-2H-pyran, reaction products with **silsesquioxane** (photoresist compns. for photolithog. patterning process)
- RN 110-87-2 HCA
- CN 2H-Pyran, 3,4-dihydro- (8CI, 9CI) (CA INDEX NAME)



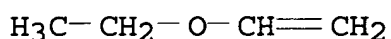
- IT **109-92-2DP**, Ethyl vinyl ether, reaction product with **silsesquioxanes** (resin; photoresist compns. for photolithog. patterning process)
- RN 109-92-2 HCA
- CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



- IC ICM G03F007-38  
ICS G03F007-30; G03F007-038
- INCL 430270100
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 35, 38, 76
- IT **Silsesquioxanes**  
(hydrolyzed; polymer resin resist compns. for photolithog. patterning process)
- IT **110-87-2DP**, 3,4-Dihydro-2H-pyran, reaction products with **silsesquioxane** 393836-45-8DP, hydrolyzed, reaction product with Et vinyl ether or 3,4-dihydro-2H-pyran 393836-46-9DP, hydrolyzed, reaction products with Et vinyl ether  
(photoresist compns. for photolithog. patterning process)
- IT 542-92-7, Cyclopentadiene, reactions 646-97-9, 1,1-**Bistrifluoromethyl**-3-buten-1-ol 10025-78-2, Trichlorosilane 393836-43-6  
(prepn. of polymer resin for resist compns.)
- IT **109-92-2DP**, Ethyl vinyl ether, reaction product with **silsesquioxanes** 393836-44-7DP, hydrolyzed, reaction product with Et vinyl ether or 3,4-dihydro-2H-pyran 393866-37-0DP, hydrolyzed, reaction product with Et vinyl ether or 3,4-dihydro-2H-pyran  
(resin; photoresist compns. for photolithog. patterning process)
- L70 ANSWER 24 OF 45 HCA COPYRIGHT 2006 ACS on STN
- 135:12123 Positive-working resist laminate and fine pattern forming method using it. Yasunami, Shoichiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001147538 A2 **20010529**, 24 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-331568 19991122.
- AB In the laminate comprising a support successively coated with 1st resist layer and 2nd resist layer, (i) the 1st resist layer is heat-curable and contains a polymer having a repeating unit  $\text{CH}_2\text{R}_1(\text{CO}_2)\text{aL}_1\text{bL}_2\text{cM}$  ( $\text{R}_1 = \text{H}$ , alkyl, halo;  $\text{L}_1\text{-L}_2 = \text{divalent linkage}$ ;  $\text{M} = \text{arom. ring}$ ;  $\text{a}, \text{b}, \text{c} = 0, 1$ ) and (ii) the 2nd layer contains (a) a polysiloxane or **polysilsesquioxane** having an acid-decomposable group and its soly. in an alkali developer increases by the action of an acid, and (b) a compd. generating an acid by irradiation of an actinic ray or radiation. The fine pattern is formed by (1) forming the 1st resist layer on the substrate and curing it by heat, (2) forming the 2nd resist layer on the 1st resist layer and patternwise exposing it with an actinic ray or radiation and alkali developing the 2nd layer, and (3) etching the

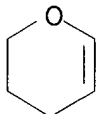
1st resist layer using the 2nd resist layer as a mask. The laminate is suited for far UV exposure, shows high resoln. and gives high accurate fine patterns and is useful for manuf. of semiconductor devices.

- IT 109-92-2DP, Ethyl vinyl ether, ethers with polysiloxane with diphenolic acid group  
(pos.-working resist laminate comprising 1st layer contg. acrylic polymer and 2nd layer contg. polysiloxane and acid generator)
- RN 109-92-2 HCA
- CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



- IC ICM G03F007-075  
ICS G03F007-039; G03F007-095; G03F007-26
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38, 76
- ST pos resist laminate acrylic polymer; polysiloxane  
**polysilsesquioxane** pos resist laminate; acid generator pos resist laminate
- IT Polysiloxanes, preparation  
**Silsesquioxanes**  
(pos.-working resist laminate comprising 1st layer contg. acrylic polymer and 2nd layer contg. polysiloxane and acid generator)
- IT 109-92-2DP, Ethyl vinyl ether, ethers with polysiloxane with diphenolic acid group 262612-30-6P 341972-59-6P  
(pos.-working resist laminate comprising 1st layer contg. acrylic polymer and 2nd layer contg. polysiloxane and acid generator)
- IT 531-18-0, Hexamethylolmelamine 953-91-3, Cyclohexyl p-toluenesulfonate 66003-76-7, Diphenyliodonium **trifluoromethanesulfonate** 125120-36-7 197447-16-8, Triphenylsulfonium 2,4,6-triisopropylphenylsulfonate 199125-55-8 251463-24-8 258341-98-9 287925-55-7, Triphenylsulfonium p-dodecylphenylsulfonate 341972-63-2D, ethers 341972-64-3 341972-66-5D, ethers 341972-68-7D, ethers and esters 341972-70-1D, ethers 341972-71-2 341972-72-3 341972-75-6 341972-77-8 341972-78-9  
(pos.-working resist laminate comprising 1st layer contg. acrylic polymer and 2nd layer contg. polysiloxane and acid generator)
- L70 ANSWER 25 OF 45 HCA COPYRIGHT 2006 ACS on STN
- 134:318673 Positive-working photoresist composition for upper resist layer of composite two-layer resist. Uno, Seiji; Mizutani, Kazuyoshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001109150 A2 20010420, 58 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 1999-284457 19991005.

- AB The title compn. contains acid-sensitive polysiloxane having repeating unit  $\{-\text{Si}[-\text{L}-\text{X}-\text{Np}(\text{Z})\text{l}(\text{OA})\text{m}(\text{Y}-\text{L}-\text{COOB})\text{n}]\text{O}_{3/2}-\}$  ( $\text{Np}$  = naphthalene ring;  $\text{A}, \text{B} = \text{H}$ , acid-sensitive group;  $\text{X}$  = single bond;  $\text{L}$  = C1-10 alkylene, C3-12 cycloalkylene;  $\text{X}, \text{Y} = -\text{OCO}-; -\text{COO}-; -\text{NHCO}-$ ; etc.;  $\text{Z}$  = halo, C1-10 alkyl; C3-12 cycloalkyl; C1-10 alkoxy, etc.;  $\text{l}, \text{m}, \text{n} = 0-3$  integer) and a photoacid generator. The compn., which contains the polysiloxane, provides the improve storageability and generates little faulty resist.
- IT **110-87-2DP**, hydroxyaryl **silsesquioxane** ethers  
(polysiloxane in pos.-working photoresist compn.)
- RN 110-87-2 HCA
- CN 2H-Pyran, 3,4-dihydro- (8CI, 9CI) (CA INDEX NAME)



- IC ICM G03F007-039  
ICS C08L083-06; G03F007-075; G03F007-095; G03F007-26
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76
- IT **Silsesquioxanes**  
(polysiloxane in pos.-working photoresist compn.)
- IT 153698-46-5, Triphenylsulfonium **pentafluorophenylsulfonate**  
197447-16-8, Triphenylsulfonium 2,4,6-triisopropylphenylsulfonate  
287925-54-6, Bis(p-tert-amylphenyl)iodonium p-tolenesulfonate  
287925-55-7, Triphenylsulfonium p-dodecylphenylsulfonate  
(photoacid generator in pos.-working photoresist compn.)
- IT 109-53-5DP, hydroxyaryl **silsesquioxane** ethers  
**110-87-2DP**, hydroxyaryl **silsesquioxane** ethers  
335262-24-3DP, ethers 335262-24-3P 335262-26-5P 335262-28-7P  
335262-30-1P 335262-34-5DP, 1-alkoxyethyl ether 335262-34-5P  
335262-37-8DP, ethers 335262-39-0DP, ethers 335262-41-4DP,  
ethers 335262-43-6DP, ethers 335262-45-8DP, 1-alkoxyethyl ether  
335262-49-2DP, 1-alkoxyethyl ether 335262-53-8DP, 1-alkoxyethyl  
ethers 335262-56-1DP, 1-alkoxyethyl ether 335262-59-4DP,  
1-alkoxyethyl ether 335262-61-8DP, 1-alkoxyethyl ether  
335277-00-4P 335277-03-7P 335277-06-0P 335277-08-2P  
335277-10-6P 335277-12-8P  
(polysiloxane in pos.-working photoresist compn.)
- L70 ANSWER 26 OF 45 HCA COPYRIGHT 2006 ACS on STN  
134:312780 Synthesis of phenyl and phenylsulfonic acid  
functionalized-MSU and their catalytic performance. Gong, Yan-Jun;  
Li, Ying; Wang, Shu-Guo; Wu, Dong; Sun, Yu-Han; Deng, Feng; Yue,

Yong (Shanxi Institute of Coal Chemistry, State Key Laboratory of Coal Chemistry, Chinese Academy of Science, Taiyuan, 030001, Peop. Rep. China). Gaodeng Xuexiao Huaxue Xuebao, 21(12), 1916-1918 (Chinese) 2000. CODEN: KTHPDM. ISSN: 0251-0790.

Publisher: Gaodeng Jiaoyu Chubanshe.

AB A series of phenyl-functionalized-MSU mesoporous mol. sieves were synthesized under neutral condition in the presence of biodegradable non-ionic polyethylene oxide (AEO9). By subsequent sulfonation of the Ph rings attached to the silica framework, the phenylsulfonic acid functionalized-MSU derivs. could be obtained. Their structure and property of the organo-modified mesoporous mol. sieves were studied by means of XRD, FT-IR, TEM, HRTEM,  $^{13}\text{C}$  MAS NMR,  $^{29}\text{Si}$  MAS NMR,  $\text{N}_2$  adsorption/desorption and probe reaction techniques. The so-produced organo-modified mesoporous mol. sieves featured bimodal pore size distribution and the pore channel was similar to those in the MSU (worm-like). The organo-modified mesoporous mol. sieves contg. phenylsulfonic acid active sites, used as solid acid catalyst, showed a much higher catalytic activity for the formation of 2,2-pentamethylene-1,3-dioxolane (**cyclic ketal**) from ethylene glycol and cyclohexanone.

IT 113923-94-7P, Phenyltriethoxysilane-TEOS copolymer  
(in synthesis of Ph and phenylsulfonic acid functionalized-MSU)

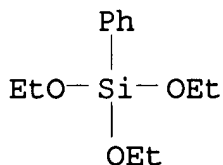
RN 113923-94-7 HCA

CN Silicic acid ( $\text{H}_4\text{SiO}_4$ ), tetraethyl ester, polymer with triethoxyphenylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 780-69-8

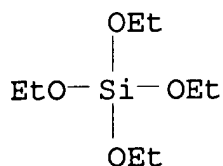
CMF C12 H20 O3 Si



CM 2

CRN 78-10-4

CMF C8 H20 O4 Si



- CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)  
Section cross-reference(s): 67
- IT **113923-94-7P**, Phenyltriethoxysilane-TEOS copolymer  
(in synthesis of Ph and phenylsulfonic acid functionalized-MSU)
- IT 177-10-6P, 1,4-Dioxaspiro[4.5]decane  
(synthesis of Ph and phenylsulfonic acid functionalized-MSU and  
catalytic performance for prepn. of **cyclic**  
**ketal** from ethylene glycol and cyclohexanone)
- IT 107-21-1, Ethylene glycol, reactions 108-94-1, Cyclohexanone,  
reactions  
(synthesis of Ph and phenylsulfonic acid functionalized-MSU and  
catalytic performance for prepn. of **cyclic**  
**ketal** from ethylene glycol and cyclohexanone)
- L70 ANSWER 27 OF 45 HCA COPYRIGHT 2006 ACS on STN  
133:281909 Stoichiometric and Catalytic Activation of Si-H Bonds by a  
Triruthenium Carbonyl Cluster, ( $\mu_3$ ,  $\eta^2$ : $\eta^3$ : $\eta^5$ -  
acenaphthylene)Ru<sub>3</sub>(CO)<sub>7</sub>: Isolation of the Oxidative Adducts,  
Catalytic Hydrosilylation of Aldehydes, Ketones, and **Acetals**  
, and Catalytic Polymerization of Cyclic Ethers. Nagashima, Hideo;  
Suzuki, Akihiro; Iura, Takafumi; Ryu, Kazuhiro; Matsubara, Kouki  
(Institute of Advanced Material Study Graduate School of Engineering  
Science and CREST Japan Science and Technology Corporation (JST),  
Kyushu University, Kasuga Fukuoka, 816-8580, Japan).  
Organometallics, 19(18), 3579-3590 (English) 2000. CODEN:  
ORGND7. ISSN: 0276-7333. OTHER SOURCES: CASREACT 133:281909.  
Publisher: American Chemical Society.
- AB Treatment of the Ru cluster ( $\mu_3$ ,  $\eta^2$ : $\eta^3$ : $\eta^5$ -  
acenaphthylene)Ru<sub>3</sub>(CO)<sub>7</sub> (1) with stoichiometric amts. of  
trialkylsilanes results in liberation of a CO ligand followed by  
oxidative addn. of a Si-H bond. The trinuclear silyl complexes  
( $\mu_3$ ,  $\eta^2$ : $\eta^3$ : $\eta^5$ -acenaphthylene)Ru<sub>3</sub>(H)(SiR<sub>3</sub>)(CO)<sub>6</sub> (2)  
were isolated in good yield. They were characterized by NMR  
spectroscopy and x-ray crystallog. Compd. 1 catalyzes the  
hydrosilylation of olefins, acetylenes, ketones, and aldehydes. In  
particular, the reactions of aldehydes and ketones proceed at room  
temp. to form the corresponding silyl ethers in good yield; the  
catalytic activities are superior to those with RhCl(PPh<sub>3</sub>)<sub>3</sub>. The  
RhCl(PPh<sub>3</sub>)<sub>3</sub>-catalyzed hydrosilylation of ketones with  
Me<sub>2</sub>(H)SiCH<sub>2</sub>CH<sub>2</sub>Si(H)Me<sub>2</sub> results in selective reaction of only one

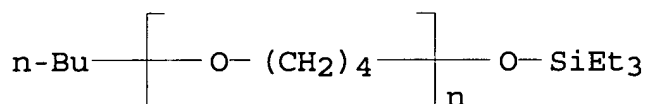
Si-H terminus, while similar reactions, when catalyzed by 1, allow use of both Si-H groups. Significantly different regio- and stereoselectivities, compared with those obtained in reactions catalyzed by  $\text{RhCl}(\text{PPh}_3)_3$ , also were obsd. in the hydrosilylation of .alpha.,.beta.-unsatd. carbonyl compds. and 4-tert-butylcyclohexanone, resp. The reactions with **acetals** and **cyclic** ethers also take place under similar conditions. The reaction of trialkylsilanes with an excess of a cyclic ether resulted in ring-opening polymn. Polymn. of THF was studied as a representative example. Treatment of trialkylsilanes with an excess of THF (10-102 equiv with respect to silanes) in the presence of a catalytic amt. of 1 gave polytetrahydrofuran with  $M_n = 1000-200,000$  and  $M_w/M_n = 1.3-2.0$ . Changing the ratio of THF to  $\text{HSiR}_3$  can control the mol. wt. NMR studies suggested that the structure of the polymer is  $\text{R}_3\text{SiO}-(\text{CH}_2)_4)_n-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ . Mechanistic considerations based on differences in the catalytic activities between the catalysts 1 and 2 are discussed.

IT 299964-13-9P 299964-15-1P 299964-17-3P

(formation from THF and hydrosilane in presence of ruthenium trinuclear acenaphthylene carbonyl cluster)

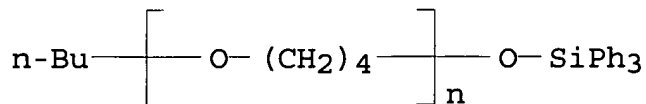
RN 299964-13-9 HCA

CN Poly(oxy-1,4-butanediyl), .alpha.-butyl-.omega.-[(triethylsilyl)oxy]- (9CI) (CA INDEX NAME)



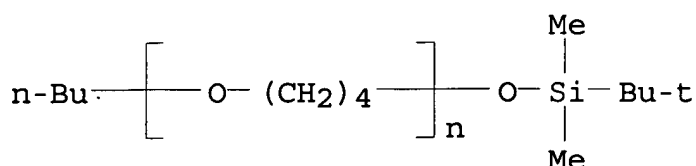
RN 299964-15-1 HCA

CN Poly(oxy-1,4-butanediyl), .alpha.-butyl-.omega.-[(triphenylsilyl)oxy]- (9CI) (CA INDEX NAME)



RN 299964-17-3 HCA

CN Poly(oxy-1,4-butanediyl), .alpha.-butyl-.omega.-[[ (1,1-dimethylethyl)dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)

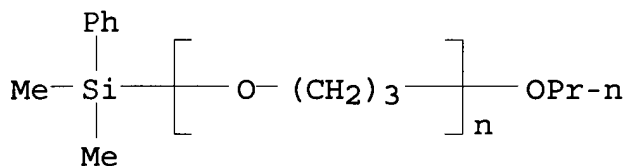


IT 299964-19-5P 299964-21-9P

(formation from cyclic ether and hydrosilane in presence of ruthenium trinuclear acenaphthylene carbonyl cluster)

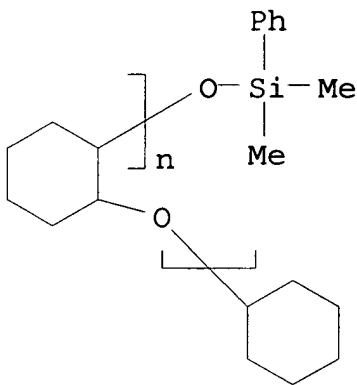
RN 299964-19-5 HCA

CN Poly(oxy-1,3-propanediyl), .alpha.-(dimethylphenylsilyl)-.omega.-propoxy- (9CI) (CA INDEX NAME)



RN 299964-21-9 HCA

CN Poly(oxy-1,2-cyclohexanediyl), .alpha.-cyclohexyl-.omega.-[(dimethylphenylsilyl)oxy]- (9CI) (CA INDEX NAME)

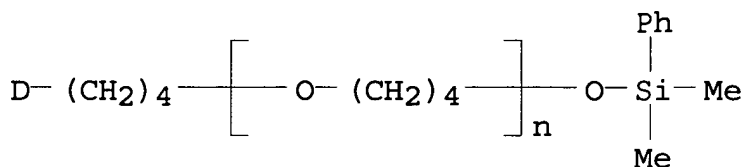


IT 299963-99-8P 299964-07-1P

(prepn. by ring-opening polymn. of cyclic ether catalyzed by ruthenium trinuclear acenaphthylene carbonyl cluster)

RN 299963-99-8 HCA

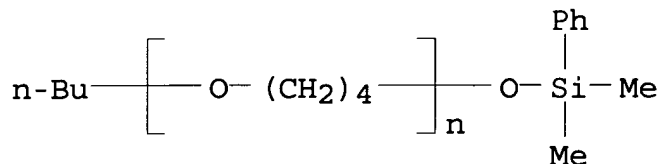
CN Poly(oxy-1,4-butanediyl), .alpha.-(butyl-4-d)-.omega.-[(dimethylphenylsilyl)oxy]- (9CI) (CA INDEX NAME)



RN 299964-07-1 HCA

CN Poly(oxy-1,4-butanediyl), .alpha.-butyl-.omega.-

[(dimethylphenylsilyl)oxy] - (9CI) (CA INDEX NAME)



- CC 29-14 (Organometallic and Organometalloidal Compounds)  
 Section cross-reference(s): 21, 35, 67, 75
- ST crystal structure ruthenium trinuclear acenaphthylene hydrido silyl carbonyl cluster; mol structure ruthenium trinuclear acenaphthylene hydrido silyl carbonyl cluster; ruthenium acenaphthylene cluster oxidative addn hydrosilane catalysis hydrosilylation polymn; hydrosilylation catalysis ruthenium acenaphthylene carbonyl cluster; ring opening polymn cyclic ether catalysis ruthenium acenaphthylene cluster; aldehyde hydrosilylation catalysis ruthenium acenaphthylene carbonyl cluster; ketone hydrosilylation catalysis ruthenium acenaphthylene carbonyl cluster; **acetal** hydrosilylation catalysis ruthenium acenaphthylene carbonyl cluster; oxidative addn hydrosilane ruthenium acenaphthylene carbonyl cluster; catalysis hydrosilylation polymn ruthenium acenaphthylene carbonyl cluster; regiochem hydrosilylation catalysis ruthenium acenaphthylene carbonyl cluster; stereochem hydrosilylation catalysis ruthenium acenaphthylene carbonyl cluster
- IT **Acetals**  
 Aldehydes, reactions  
 Alkenes, reactions  
 Alkynes  
 Ketones, reactions  
 (hydrosilylation catalyzed by ruthenium acenaphthylene carbonyl cluster)
- IT 299964-09-3P 299964-11-7P **299964-13-9P**  
**299964-15-1P 299964-17-3P**  
 (formation from THF and hydrosilane in presence of ruthenium trinuclear acenaphthylene carbonyl cluster)
- IT 25702-20-9DP, Poly(cyclohexene oxide), dimethylphenylsilyl-terminated 25722-06-9DP, Poly(oxetane), dimethylphenylsilyl-terminated **299964-19-5P 299964-21-9P**  
 (formation from cyclic ether and hydrosilane in presence of ruthenium trinuclear acenaphthylene carbonyl cluster)
- IT 24979-97-3DP, Poly(tetrahydrofuran), dimethylphenylsilyl-terminated **299963-99-8P 299964-07-1P**  
 (prepn. by ring-opening polymn. of cyclic ether catalyzed by ruthenium trinuclear acenaphthylene carbonyl cluster)

133:135686 Ring opening copolymerization of .epsilon.-Caprolactone, .gamma.-(triethylsilyloxy)-.epsilon.-Caprolactone and .gamma.-ethylene **ketal**-.epsilon.-Caprolactone: a route to hetero-graft copolyesters. Stassin, F.; Halleux, O.; Dubois, Ph.; Detrembleur, Ch.; Lecomte, Ph.; Jerome, R. (Center for Education and Research on Macromolecules (CERM), University of Liege, Liege, 4000, Belg.). Macromolecular Symposia, 153(Recent Advances in Ring Opening (Metathesis) Polymerization), 27-39 (English) 2000 . CODEN: MSYMEC. ISSN: 1022-1360. Publisher: Wiley-VCH Verlag GmbH.

AB .epsilon.-Caprolactone (.epsilon.-CL) has been copolymd. with two precursors of .gamma.-hydroxy-.epsilon.-CL, i.e., .gamma.-ethylene **ketal**-.epsilon.-caprolactone (TOSUO) and .gamma.-(triethylsilyloxy)-.epsilon.-caprolactone (TeSCL). The triethylsilyloxy **pendant** groups can be selectively deprotected into hydroxyl groups followed by the deprotection of the **acetal** substituents. Each series of hydroxyl groups can be used to initiate the polymn. of cyclic monomers so leading to hetero-graft copolyesters with, for instance, poly-.epsilon.-CL and polylactide grafts.

IT **286941-84-2DP**, reaction products with AlEt<sub>3</sub> and then D.L-lactide or caprolactone **286941-84-2P** (ring-opening copolymn. of .epsilon.-caprolactone, .gamma.-(triethylsilyloxy)-.epsilon.-caprolactone and .gamma.-ethylene **ketal**-.epsilon.-caprolactone)

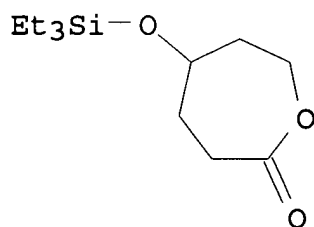
RN 286941-84-2 HCA

CN 1,4,8-Trioxaspiro[4.6]undecan-9-one, polymer with 2-oxepanone and 5-[(triethylsilyl)oxy]-2-oxepanone (9CI) (CA INDEX NAME)

CM 1

CRN 286941-83-1

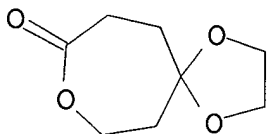
CMF C12 H24 O3 Si



CM 2

CRN 110674-74-3

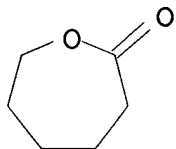
CMF C8 H12 O4



CM 3

CRN 502-44-3

CMF C6 H10 O2



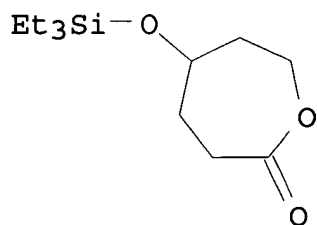
RN 286941-84-2 HCA

CN 1,4,8-Trioxaspiro[4.6]undecan-9-one, polymer with 2-oxepanone and  
5-[(triethylsilyl)oxy]-2-oxepanone (9CI) (CA INDEX NAME)

CM 1

CRN 286941-83-1

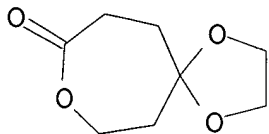
CMF C12 H24 O3 Si



CM 2

CRN 110674-74-3

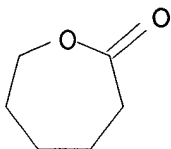
CMF C8 H12 O4



CM 3

CRN 502-44-3

CMF C6 H10 O2



- CC 35-7 (Chemistry of Synthetic High Polymers)
- ST ring opening copolymn triethylsilyloxy ethylene **ketal** caprolactone
- IT Polyesters, preparation  
(caprolactone-based; ring-opening copolymn. of .epsilon.-caprolactone, .gamma.-(triethylsilyloxy)-.epsilon.-caprolactone and .gamma.-ethylene **ketal**-.epsilon.-caprolactone)
- IT Polymerization  
(ring-opening; ring-opening copolymn. of .epsilon.-caprolactone, .gamma.-(triethylsilyloxy)-.epsilon.-caprolactone and .gamma.-ethylene **ketal**-.epsilon.-caprolactone)
- IT 556-48-9, 1,4-Cyclohexanediol 994-30-9  
(ring-opening copolymn. of .epsilon.-caprolactone, .gamma.-(triethylsilyloxy)-.epsilon.-caprolactone and .gamma.-ethylene **ketal**-.epsilon.-caprolactone)
- IT 13482-22-9P 286941-82-0P 286941-83-1P  
(ring-opening copolymn. of .epsilon.-caprolactone, .gamma.-(triethylsilyloxy)-.epsilon.-caprolactone and .gamma.-ethylene **ketal**-.epsilon.-caprolactone)
- IT 95-96-5DP, DL-Lactide, reaction products with substituted-caprolactone copolymer 502-44-3DP, .epsilon.-Caprolactone, reaction products with substituted-caprolactone copolymer **286941-84-2DP**, reaction products with AlEt<sub>3</sub> and then D.L-lactide or caprolactone **286941-84-2P**  
(ring-opening copolymn. of .epsilon.-caprolactone, .gamma.-(triethylsilyloxy)-.epsilon.-caprolactone and .gamma.-ethylene **ketal**-.epsilon.-caprolactone)

L70 ANSWER 29 OF 45 HCA COPYRIGHT 2006 ACS on STN

132:64603 New Molecular Imprinting Materials: Liquid Crystalline Networks. Marty, J.-D.; Tizra, M.; Mauzac, M.; Rico-Lattes, I.; Lattes, A. (Laboratoire des Interactions Moleculaires et Reactivite Chimique et Photochimique, U.M.R. CNRS 5623 Universite Paul Sabatier, Toulouse, 31062, Fr.). *Macromolecules*, 32(25), 8674-8677 (English) 1999. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.

AB **Side chain** liq. cryst. poly(hydrogenmethyl-dimethyl)siloxane with 4-methoxy-4'-(3-butenyloxy)phenylbenzoate mesogen **side chains** was obtained by hydrosilylation. The resulting polymer was allowed to react with acetophenone as template to obtain a mol. imprinted network via **ketal** formation using p-toluenesulfonic acid as catalyst. Removal of the template was performed at room temp. in methanol/water/p-toluenesulfonic acid, which is not a solvent for the network. The networks remain mesomorphous even with high amts. of template. The liq. cryst. character enhances interactions between polymer chains and minimizes crosslinking d., resulting in a network with high capacity for imprinting sites. The liq. cryst. behavior remains unchanged through the extn. of the template, indicating a memory effect. The selectivity and specificity of the networks towards the template mol. are quite good, but still require optimization.

IT **156118-35-3DP**, Methylsilanediol-dimethylsilanediol copolymer, trimethylsilyl-terminated, reaction products with alkyloxyphenyl benzoates and **ketals** (acetophenone-imprinted; prepn. of mol. imprinted polysiloxane-mesogen liq. cryst. networks and selectivity toward acetophenone template)

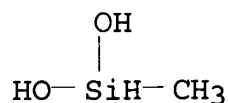
RN 156118-35-3 HCA

CN Silanediol, dimethyl-, polymer with methylsilanediol (9CI) (CA INDEX NAME)

CM 1

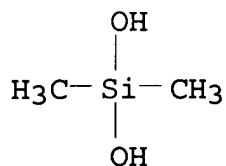
CRN 43641-90-3

CMF C H6 O2 Si



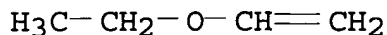
CM 2

CRN 1066-42-8  
CMF C2 H8 O2 Si



- CC 35-8 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 36, 75
- IT Polysiloxanes, preparation  
(alkyloxyphenyl benzoate and **ketal** derivs.; prepn. of mol. imprinted polysiloxane-mesogen liq. cryst. networks and selectivity toward acetophenone template)
- IT 114482-61-0DP, 4-Methoxy-4'-(3-butenyloxy)phenylbenzoate, reaction products with methylsilanediol-dimethylsilanediol copolymer **156118-35-3DP**, Methylsilanediol-dimethylsilanediol copolymer, trimethylsilyl-terminated, reaction products with alkyloxyphenyl benzoates and **ketals**  
(acetophenone-imprinted; prepn. of mol. imprinted polysiloxane-mesogen liq. cryst. networks and selectivity toward acetophenone template)
- L70 ANSWER 30 OF 45 HCA COPYRIGHT 2006 ACS on STN
- 131:145240 Water-curable **fluorocarbon** resin composition.  
Tomita, Hidetoshi; Kudo, Shinichi; Kuwamura, Shinichi (Dainippon Ink and Chemicals, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 11209475 A2 **19990803** Heisei, 29 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1998-11337 19980123.
- AB Title compn. with good gloss retention and rain pollution resistance comprises a **fluoropolymer** having both hydrolytic silyl group and acid group, a polysiloxane having hydrolytic group, and a condensation **fluoropolymer** neutralized with a base compd.  
Thus, monobutyl maleate 68, vinyl acetate 120, **chlorotrifluoroethylene** 400, Et vinyl ether 352 and vinyltris(.beta.-methoxyethoxy)silane 60 were polyemd. to give a **fluorine**-contg. polymer, 928 parts of which was mixed with phenyltrimethoxysilane 495 and dimethoxydimethylsilane 300, triethylamine 35 parts to give a resin having solids 43.9%, 1481 pars of which was mixed with a pigment CR 97, showing curing temp. 180.degree., curing time 30 min., weather resistance 97, and pollution resistance 2.1.
- IT **109-92-2DP**, Ethyl vinyl ether, polymers with vinyl ethers, phenyltrimethoxysilane and **silsesquioxanes**  
(water-curable **fluorocarbon** resin compn.)
- RN 109-92-2 HCA

CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



- IC ICM C08G081-02  
ICS C08G077-42; C08L083-10
- CC 37-3 (Plastics Manufacture and Processing)
- ST water curable **fluorocarbon** polysiloxane compn; monobutyl maleate vinyl ether **chlorotrifluoroethylene** vinyltrismethoxyethoxysilane water curable compn
- IT **Silsesquioxanes**  
(Me Ph; water-curable **fluorocarbon** resin compn.)
- IT Polysiloxanes, preparation  
Polysiloxanes, preparation  
(**fluorine**-contg.; water-curable **fluorocarbon** resin compn.)
- IT **Fluoropolymers**, preparation  
**Fluoropolymers**, preparation  
(polysiloxane-; water-curable **fluorocarbon** resin compn.)
- IT 79-38-9DP, **Chlorotrifluoroethylene**, polymers with vinyl ethers, phenyltrimethoxysilane and **silsesquioxanes**  
109-92-2DP, Ethyl vinyl ether, polymers with vinyl ethers, phenyltrimethoxysilane and **silsesquioxanes** 925-21-3DP, Monobutyl maleate, polymers with vinyl ethers, phenyltrimethoxysilane and **silsesquioxanes** 1067-53-4DP, Vinyltris(.beta.-methoxyethoxy)silane, polymers with vinyl ethers, phenyltrimethoxysilane and **silsesquioxanes** 1112-39-6DP, Dimethoxydimethylsilane, polymers with vinyl ethers, phenyltrimethoxysilane and **silsesquioxanes** 2996-92-1DP, Phenyltrimethoxysilane, polymers with vinyl ethers, phenyltrimethoxysilane and **silsesquioxanes** 234080-25-2P, Monobutyl maleate-vinyl acetate-**chlorotrifluoroethylene**-ethyl vinyl ether-vinyltris(.beta.-methoxyethoxy)silane-phenyltrimethoxysilane copolymer triethylamine salt 235107-30-9P, Monobutyl maleate-vinyl acetate-**chlorotrifluoroethylene**-ethyl vinyl ether-vinyltris(.beta.-methoxyethoxy)silane-phenyltrimethoxysilane-dimethoxydimethylsilane copolymer triethylamine salt 235107-32-1P, Ethyl vinyl ether-hydroxybutyl vinyl ether-monoethyl maleate-vinyl pivalate-vinyltris(.beta.-methoxyethoxy)silane-**hexafluoropropylene**-phenyltrimethoxysilane copolymer triethylamine salt 235107-34-3P, Monobutyl maleate-vinyl acetate-**chlorotrifluoroethylene**-ethyl vinyl ether-vinyltris(.beta.-methoxyethoxy)silane-methyltrimethoxysilane-phenyltrimethoxysilane-dimethoxydimethylsilane copolymer triethylamine salt 235107-35-4P, Ethyl vinyl ether-hydroxybutyl vinyl ether-cyclohexyl vinyl

ether-vinyltrimethoxysilane-**chlorotrifluoroethylene**  
 -phenyltrimethoxysilane copolymer 235107-37-6P, Ethyl vinyl  
 ether-hydroxybutyl vinyl ether-monoethyl maleate-vinyl  
 pivalate-vinyltris(.beta.-methoxyethoxy)silane-  
**hexafluoropropylene**-phenyltrimethoxysilane-S 695 copolymer  
 triethylamine salt 235107-38-7P, Ethyl vinyl ether-hydroxybutyl  
 vinyl ether-cyclohexyl vinyl ether-KP 392-vinyltrimethoxysilane-  
**chlorotrifluoroethylene**-phenyltrimethoxysilane copolymer  
 (water-curable **fluorocarbon** resin compn.)

L70 ANSWER 31 OF 45 HCA COPYRIGHT 2006 ACS on STN

131:33097 Thermal transfer sheet. Shinohara, Hideo; Hirota, Takao  
 (Mitsubishi Chemical Industries Ltd., Japan). Jpn. Kokai Tokkyo  
 Koho JP 11157227 A2 **19990615** Heisei, 6 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 1997-327709 19971128.

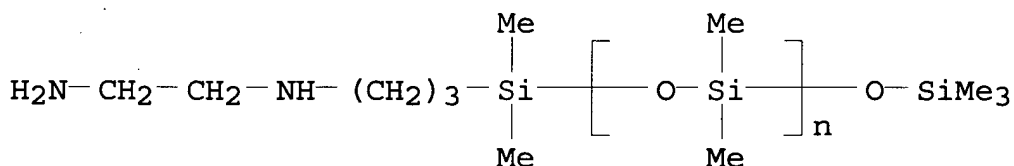
AB The sheet, with relatively less glossy difference between picture  
 and nonpicture sections, comprises a substrate and a releasable  
 image receptive layer on one side of the substrate, wherein there is  
 an intermediate layer made from .gtoreq.1 binder contg. fillers.  
 Thus, a sheet was prepd. from a polypropylene synthetic paper, an  
 intermediate layer of HE 6021 (polyurethane vanish) contg. TiO<sub>2</sub> in  
 solvents and an image receptor of polyvinylphenyl **acetal**  
 prepd. by the reaction of poly(vinyl alc.) and phenylacetaldehyde,  
 TSR 160 (modified siloxane), KF 393 (amino-modified silicone oil)  
 and Mitec NY 710A (polyfunctional isocyanate) in solvents.

IT **158688-16-5**, KF 393

(image receptors; thermal transfer sheet)

RN 158688-16-5 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-[[3-[(2-  
 aminoethyl)amino]propyl]dimethylsilyl]-.omega.-[(trimethylsilyl)oxy]-  
 (9CI) (CA INDEX NAME)



IC ICM B41M005-38

ICS B41M005-30

CC 42-13 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 74

ST thermal transfer polyvinyl **acetal** image receptor; siloxane  
 polyisocyanate image receptor; polyurethane adhesive thermal  
 transfer sheet

IT Polyvinyl **acetals**

(intermediate adhesives; thermal transfer sheet)

IT 139465-66-0, Mitec NY 710A **158688-16-5**, KF 393

(image receptors; thermal transfer sheet)

IT 122-78-1D, Phenylacetaldehyde, **cyclic acetals**

with poly(vinyl alc.) 9002-89-5D, Poly(vinyl alcohol), reaction products with phenylacetaldehyde

(intermediate adhesives; thermal transfer sheet)

L70 ANSWER 32 OF 45 HCA COPYRIGHT 2006 ACS on STN

130:14372 Conformational control by quaternary centers: theory, database evidence and application to polymers. Alder, Roger W.; Allen, Paul R.; Anderson, Kevin R.; Butts, Craig P.; Khosravi, Ezat; Martin, Antonio; Maunder, Colette M.; Orpen, A. Guy; St. Pourcain, Christopher B. (School of Chemistry, University of Bristol, Bristol, BS8 1TS, UK). Journal of the Chemical Society, Perkin Transactions 2: Physical Organic Chemistry (10), 2083-2108 (English) **1998**. CODEN: JCPKBH. ISSN: 0300-9580. Publisher: Royal Society of Chemistry.

AB The conformational effects of the quaternary center in (RCH<sub>2</sub>CH<sub>2</sub>)<sub>4</sub>Xq species are studied by mol. mechanics calcns. on hydrocarbons, ammonium ions, related species, and the results verified by data on quaternary ammonium ions from the Cambridge Structural Database. Prn4C and Prn4N<sup>+</sup> have just two low-energy structures, with D<sub>2d</sub> or S<sub>4</sub> symmetry. All other conformations suffer from g<sup>+</sup>g<sup>-</sup> non-bonding interactions and will be populated to the extent of <5% at ambient temps. These non-bonding interactions affect both the inner torsion angles, CH<sub>2</sub>-CH<sub>2</sub>-Xq-CH<sub>2</sub> and the next set of torsions, -CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-Xq, but the third set of torsions away from the quaternary center is unaffected. Two competitive mechanisms for interconversion of the D<sub>2d</sub> and S<sub>4</sub> conformations are proposed on the basis of mol. mechanics calcns. Polymers [(RCH<sub>2</sub>CH<sub>2</sub>)<sub>2</sub>C(CH<sub>2</sub>)<sub>2</sub>]<sub>n</sub> and [(RCH<sub>2</sub>CH<sub>2</sub>)<sub>2</sub>C(CH<sub>2</sub>)<sub>3</sub>]<sub>n</sub> are strain-free with controlled conformations for the -(CH<sub>2</sub>)<sub>2</sub>- and -(CH<sub>2</sub>)<sub>3</sub>- segments. In polymers contg. simple alkyl **side chains**, there are two energetically similar conformations assocd. with the D<sub>2d</sub> local structure which have aaaa and ag<sup>+</sup>-.g<sup>+</sup>-.a torsion angle sequences for the polymer chain, and two comparable sequences ag<sup>+</sup>-.aa and ag<sup>+</sup>-.g<sup>+</sup>-.a assocd. with S<sub>4</sub> local symmetry. Poly[(1,1-di-R)butane-1,4-diyl]<sub>s</sub> (R = Et, Pr, Bu and PhCH<sub>2</sub>CH<sub>2</sub>) have been prepd. by ring opening metathesis polymn. of 3,3-dialkylcyclobutenes, followed by diimide redn., and their phys. properties are in accord with these predictions. More highly structured side groups can act as extra conformational control elements, and the prepn. of monomers and some polymers with these extra features is reported. Planar arom. side groups like fluorene favor aaaa conformations, cyclohexyl side groups disfavor aaaa, but do not strongly discriminate between ag<sup>+</sup>-.aa and ag<sup>+</sup>-.g<sup>+</sup>-.a, adamantane side groups strongly favor ag<sup>+</sup>-.g<sup>+</sup>-.a, and a chiral ag<sup>+</sup>aa sequence is favored for a polymer from (1R,2R,5R,7R)-2,8,8-trimethyltricyclo[5.1.1.0<sup>2,5</sup>]non-3-ene,

itself derived from .alpha.-pinene. Studies directed at prepg. some structurally-related **ketal** polymers and a potential covalent **ketal** network are also described.

IT 215958-50-2P 215958-52-4P

(prepn. and conformational control by quaternary centers in various mols. and polymeric materials)

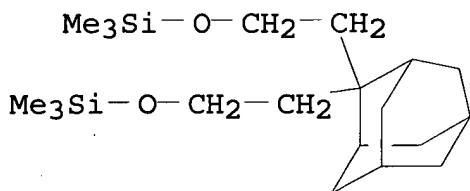
RN 215958-50-2 HCA

CN Silane, [tricyclo[3.3.1.1<sup>3,7</sup>]decylidenebis(2,1-ethanedioxy)]bis[trimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 215958-23-9

CMF C20 H40 O2 Si2



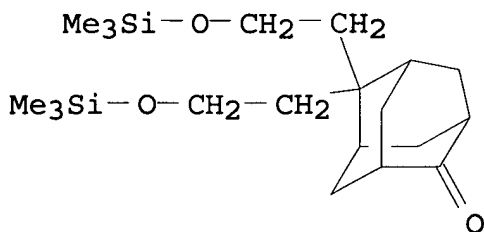
RN 215958-52-4 HCA

CN Tricyclo[3.3.1.1<sup>3,7</sup>]decanone, 6,6-bis[2-[(trimethylsilyl)oxy]ethyl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 215958-42-2

CMF C20 H38 O3 Si2



CC 36-2 (Physical Properties of Synthetic High Polymers)

IT 760-21-4P, 2-Ethyl-1-butene 5396-91-8P 6795-79-5P,  
2-Butyl-1-hexene 15918-08-8P, 2-Propyl-1-pentene 17486-87-2P  
22693-13-6P 27607-77-8DP, Trimethylsilyltrifluoromethane  
sulfonate, reaction products with polymers 29800-45-1P,  
Spiro[3.5]nonan-1-one 41487-65-4P 70042-50-1P 123489-40-7P  
123489-41-8P 155940-83-3P 155940-84-4DP, hydrogenated

155940-84-4P 203070-78-4P, 9H-Fluorene-9,9-diethanol  
 203070-79-5P 214776-59-7P 215957-58-7P 215957-59-8P  
 215957-60-1P 215957-61-2P 215957-62-3P 215957-63-4P  
 215957-64-5P 215957-65-6P 215957-66-7P 215957-67-8P  
 215957-68-9P 215957-69-0P 215957-70-3P 215957-71-4P  
 215957-72-5P 215957-73-6P 215957-74-7P 215957-75-8P  
 215957-76-9P 215957-77-0P 215957-78-1P 215957-79-2P  
 215957-80-5P 215957-81-6P 215957-82-7P 215957-83-8P  
 215957-84-9P, Spiro[3.5]non-1-ene 215957-85-0P 215957-86-1P  
 215957-88-3DP, hydrogenated 215957-88-3P 215957-91-8DP,  
 hydrogenated 215957-91-8P 215957-93-0P 215957-95-2DP,  
 hydrogenated 215957-95-2P 215957-97-4DP, hydrogenated  
 215957-97-4P 215957-99-6DP, hydrogenated 215957-99-6P  
 215958-08-0P 215958-12-6P 215958-14-8P 215958-17-1P,  
 Tricyclo[3.3.1.1<sup>3,7</sup>]decane-2,2-diethanol 215958-20-6P  
 215958-23-9P 215958-26-2P 215958-29-5P 215958-32-0P  
 215958-35-3P 215958-37-5P 215958-40-0P 215958-42-2P  
 215958-45-5P **215958-50-2P 215958-52-4P**  
 215958-53-5P

(prepn. and conformational control by quaternary centers in various mols. and polymeric materials)

L70 ANSWER 33 OF 45 HCA COPYRIGHT 2006 ACS on STN

129:283449 Planographic original plate. Kawamura, Koichi; Maemoto, Kazuo; Ohashi, Hidekazu (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 869394 A1 **19981007**, 56 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 1998-105952 19980401. PRIORITY: JP 1997-85328 19970403; JP 1997-89451 19970408; JP 1997-89816 19970408.

AB The object of the present invention is to provide a planog. original plate which can be engraved directly according to digital signals by laser beams and which can be water-developed or can be used directly for printing without a developing process. This objective has been achieved by a planog. original plate comprising a substrate and a photosensitive layer which is supported by the substrate and which contains a polymeric compd. having as a **side chain** at least one structural unit selected from the structural units represented by the general formula -SO<sub>3</sub>CH<sub>2</sub>LnOZ where L represents a linking group composed of a nonmetallic atom, OZ represents a group which is decompd. by an acid to become OH, and n is 0 or 1, -SO<sub>3</sub>LW<sub>1</sub> where W<sub>1</sub> represents a group which is decompd. by an acid and selected from ester, **ketal**, thioketal, **acetal**, and tertiary alc. groups and L represents a polyvalent linking group comprising a nonmetallic atom, which is necessary for linking the structural unit to a polymer skeleton and whose decompn. accompanies the decompn. of W<sub>1</sub> decompd. by an acid to generate a sulfonic acid, and -SO<sub>3</sub>C(R<sub>1</sub>)=CR<sub>2</sub>R<sub>3</sub> where R<sub>1</sub>-3 represent H or an alkyl, aryl,

substituted amino, alkylthio, arylthio, alkoxy, aryloxy, carboxyl, alkoxycarbonyl, aryloxycarbonyl, acyl, cyano, halogen, or amido group provided that any two of R1-3 and a carbon atom linked thereto may form a ring together with a nonmetallic atom.

IT 213914-15-9

(photosensitive compns. for planog. printing plate prepn. contg.)

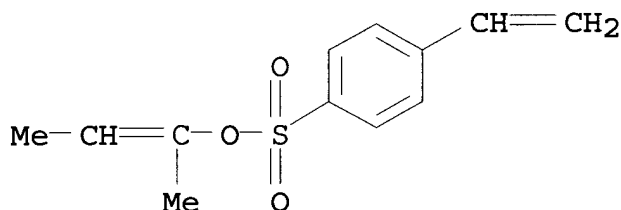
RN 213914-15-9 HCA

CN 2-Propenoic acid, 2-methyl-, 3-(trimethoxysilyl)propyl ester, polymer with 1-methyl-1-propenyl 4-ethenylbenzenesulfonate (9CI)  
(CA INDEX NAME)

CM 1

CRN 213914-07-9

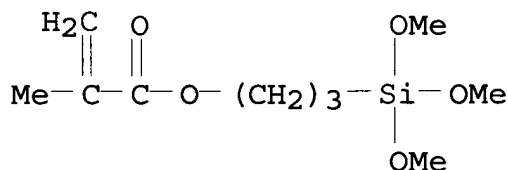
CMF C12 H14 O3 S



CM 2

CRN 2530-85-0

CMF C10 H20 O5 Si



IC ICM G03F007-039

ICS G03F007-004; B41C001-10; B41M005-36

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 213914-08-0 213914-10-4 213914-12-6 213914-14-8

213914-15-9 213914-16-0 213914-17-1 213914-19-3

213914-21-7

(photosensitive compns. for planog. printing plate prepn. contg.)

L70 ANSWER 34 OF 45 HCA COPYRIGHT 2006 ACS on STN

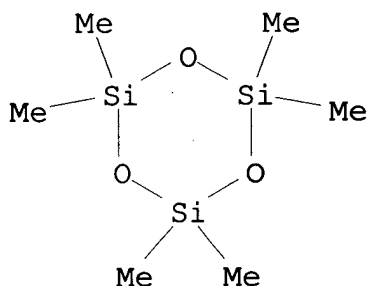
128:13455 Cationic ring-opening polymerizations of **cyclic**

ketene **acetals** initiated by acids at high temperatures.  
Liu, Yuxia; Pittman, Charles U. , Jr. (Department of Chemistry, University/Industry Chemical Research Center, Mississippi State University, Mississippi State, MS, 39762, USA). Journal of Polymer Science, Part A: Polymer Chemistry, 35(17), 3655-3671 (English) 1997. CODEN: JPACEC. ISSN: 0887-624X. Publisher: John Wiley & Sons, Inc..

- AB Three unsubstituted **cyclic ketene acetals** (CKAs), 2-methylene-1,3-dioxolane (I), 2-methylene-1,3-dioxane (II), and 2-methylene-1,3-dioxepane (III), undergo exclusive 1,2-addn. polymn. at low temps., and only poly(CKAs) are obtained. At higher temps., ring-opening polymn. (ROP) can be dominant, and polymers with a mixt. of ester units and **cyclic ketal** units are obtained. When the temp. is raised closer to the ceiling temp. (Tc) of the 1,2-addn. propagation reaction, 1,2-addn. polymn. becomes reversible and ring-opened units are introduced to the polymer. The ceiling temp. of 1,2-addn. polymn. varies with the ring size of the CKAs (lowest for III, highest for II). At temps. below 138.degree.C, II underwent 1,2-addn. polymn. At above 150.degree.C, a sol. polymer was obtained contg. a mixt. of ring-opened ester units and 1,2-addn. **cyclic ketal** units. I polyd. only by the 1,2-addn. route at temps. below 30.degree.C. At 67-80.degree.C, an insol. polymer was obtained which contained mostly 1,2-addn. units but small amts. of ester units were detected. At 133.degree.C, a sol. polymer was obtained contg. a substantial fraction of ring-opened ester units together with 1,2-addn. **cyclic ketal** units. III underwent partial ROP even at 20.degree.C to give a sol. polymer contg. ring-opened ester units and 1,2-addn. **cyclic ketal** units. At -20.degree.C, III gave an insol. polymer with 1,2-addn. units exclusively. Several catalysts were able to initiate the ROP of I, II, and III, including RuCl<sub>2</sub>(PPh<sub>3</sub>)<sub>3</sub>, BF<sub>3</sub>, TiCl<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub> supported on carbon, (CH<sub>3</sub>)<sub>2</sub>CHCOOH, and CH<sub>3</sub>COOH. The initiation by Lewis acids or protonic acids probably occurs through an initial protonation. The propagation step of the ROP proceeds via an SN<sub>2</sub> mechanism. The chain transfer and termination rates become faster at high temps. and this may be the primary reason for the low mol. wts. (Mn .ltoreq. 103) obsd. for all ring-opening polymers.
- IT 199103-03-2P, Hexamethylcyclotrisiloxane;2-methylene-1,3-dioxane copolymer  
(cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)
- RN 199103-03-2 HCA
- CN Cyclotrisiloxane, hexamethyl-, polymer with 2-methylene-1,3-dioxane (9CI) (CA INDEX NAME)

C1CCCOC1=O

CRN 541-05-9  
CMF C6 H18 O3 Si3



- CC 35-3 (Chemistry of Synthetic High Polymers)  
ST **cyclic** ketene **acetal** ring opening polymn;  
mechanism ring opening polymn **cyclic acetal**;  
methylenedioxolane ring opening polymn mechanism; methylenedioxane  
ring opening polymn mechanism; methylenedioxepane ring opening  
polymn mechanism  
IT Polyesters, preparation  
Polyesters, preparation  
(cardo; cationic ring-opening polymn. of **cyclic** ketene  
**acetals** initiated by acids at high temps.)  
IT Polymer chains  
(cationic ring-opening polymn. of **cyclic** ketene  
**acetals** initiated by acids at high temps.)  
IT Polymerization  
(cationic, ring-opening, mechanism; cationic ring-opening polymn.  
of **cyclic** ketene **acetals** initiated by acids  
at high temps.)  
IT Polymerization catalysts  
(cationic, ring-opening; cationic ring-opening polymn. of  
**cyclic** ketene **acetals** initiated by acids at  
high temps.)

- IT Polysiloxanes, preparation  
Polysiloxanes, preparation  
(polyester-, cardo; cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)
- IT Cardo polymers  
(polyester-polysiloxane-; cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)
- IT Cardo polymers  
Cardo polymers  
(polyesters; cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)
- IT Polyesters, preparation  
Polyesters, preparation  
(polysiloxane-, cardo; cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)
- IT 7440-44-0, Carbon, uses  
(catalyst support; cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)
- IT 64-19-7, Acetic acid, uses 79-31-2, Isobutyric acid 109-63-7, Boron trifluoride diethyl etherate 7550-45-0, Titanium tetrachloride, uses 7664-93-9, Sulfuric acid, uses 15529-49-4, Tris(triphenylphosphine)ruthenium dichloride  
(catalyst; cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)
- IT 4362-23-6P, 2-Methylene-1,3-dioxolane 5663-11-6P, 2-Methylene-1,3-dioxane 69814-56-8P, 2-Methylene-1,3-dioxepane  
(cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)
- IT 83932-54-1P 83932-55-2P 83952-55-0P **199103-03-2P**, Hexamethylcyclotrisiloxane;2-methylene-1,3-dioxane copolymer  
(cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)
- IT 57626-95-6P, 2-(Bromomethyl)-1,3-dioxepane  
(intermediate for monomer; cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)
- IT 110-63-4, 1,4-Butanediol, reactions 7252-83-7, Bromoacetaldehyde dimethyl **acetal**  
(starting material for monomer; cationic ring-opening polymn. of **cyclic ketene acetals** initiated by acids at high temps.)

modification. Ichinohe, Shoji; Yamazaki, Toshio; Yamamoto, Yasushi (Shin-Etsu Chemical Co., Ltd., Japan). Eur. Pat. Appl. EP 718345 A1 19960626, 24 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1995-308979 19951211. PRIORITY: JP 1994-332149 19941212; JP 1995-202815 19950717.

AB Resins having a **pendant** group which can react with an isocyanate group are modified with isocyanatosiloxanes. The monoisocyanate-terminated siloxane may be obtained by addn. between a mono-hydrogen-terminated siloxane and an isocyanate group-contg. org. silicon compd. having one isocyanate group and at least one aliph. unsatd. hydrocarbon group. The monoisocyanate-terminated siloxane may also be obtained by introducing an isocyanate group into a single end primary aminosiloxane. The isocyanatosiloxane may also be a polyfunctional isocyanatosiloxane which is obtained by addn. reaction between a H siloxane having at least two SiH groups and an isocyanate group-contg. org. silicon compd. having one isocyanate group and one aliph. unsatd. hydrocarbon group. Modification of resins with the isocyanatosiloxanes can be done in an industrially advantageous manner without problems of resin gelation and off-setting, and the resulting modified resin have improved surface slippage.

IT 162153-54-0P 179981-88-5DP, reaction products with vinyl **acetal** polymers 179981-89-6DP, reaction products with vinyl **acetal** polymers 179981-91-0DP, reaction products with vinyl **acetal** polymers 179981-93-2DP, reaction products with vinyl **acetal** polymers 179981-94-3DP, reaction products vinyl butyral polymers 179981-95-4P 179981-96-5P 180184-63-8P

(manuf. of isocyanatosiloxanes for modification of resins with reduced gelation and off-setting and improved surface slippage)

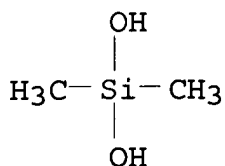
RN 162153-54-0 HCA

CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with dimethylsilanediol, ethenylbenzene and methyl 2-methyl-2-propenoate, graft (9CI) (CA INDEX NAME)

CM 1

CRN 1066-42-8

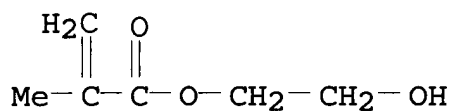
CMF C2 H8 O2 Si



CM 2

CRN 868-77-9

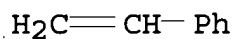
CMF C6 H10 O3



CM 3

CRN 100-42-5

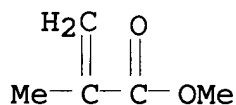
CMF C8 H8



CM 4

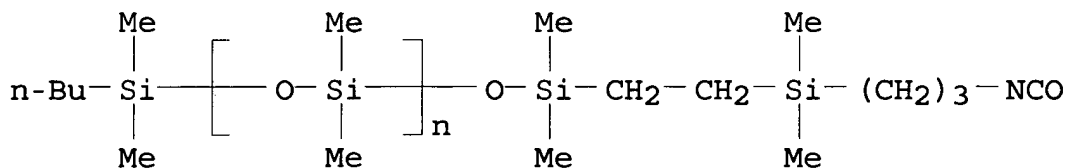
CRN 80-62-6

CMF C5 H8 O2



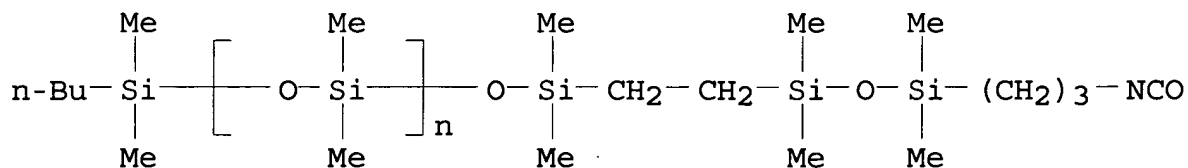
RN 179981-88-5 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-(butyldimethylsilyl)-.omega.-  
[[[2-[(3-isocyanatopropyl)dimethylsilyl]ethyl]dimethylsilyl]oxy]-  
(9CI) (CA INDEX NAME)



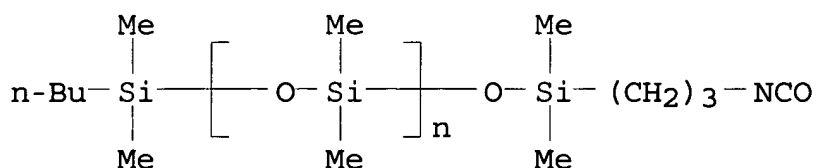
RN 179981-89-6 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-(butyldimethylsilyl)-.omega.-  
[[[2-[3-(3-isocyanatopropyl)-1,1,3,3-tetramethyldisiloxanyl]ethyl]di-  
methylsilyl]oxy]- (9CI) (CA INDEX NAME)



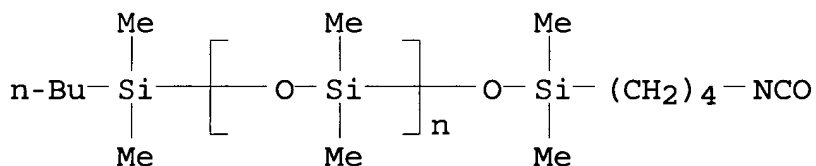
RN 179981-91-0 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-(butyldimethylsilyl)-.omega.-[[3-isocyanatopropyl]dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



RN 179981-93-2 HCA

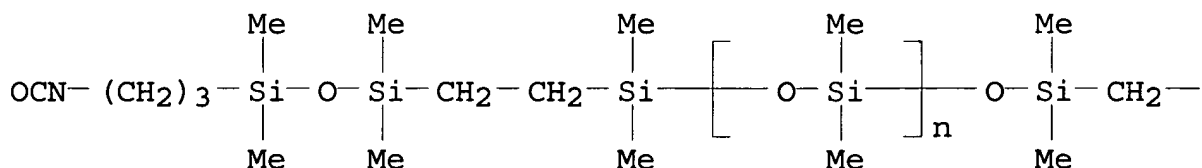
CN Poly[oxy(dimethylsilylene)], .alpha.-(butyldimethylsilyl)-.omega.-[[4-isocyanatobutyl]dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



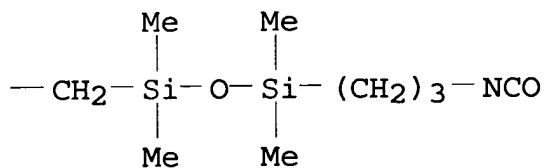
RN 179981-94-3 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-[[2-[3-(3-isocyanatopropyl)-1,1,3,3-tetramethyldisiloxanyl]ethyl]dimethylsilyl]-.omega.-[[[2-[3-(3-isocyanatopropyl)-1,1,3,3-tetramethyldisiloxanyl]ethyl]dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RN 179981-95-4 HCA

CN 2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester, polymer with ethenylbenzene, .alpha.-[[2-[3-(3-isocyanatopropyl)-1,1,3,3-tetramethyldisiloxanyl]ethyl]dimethylsilyl]-.omega.-[[[2-[3-(3-isocyanatopropyl)-1,1,3,3-tetramethyldisiloxanyl]ethyl]dimethylsilyl]oxy]poly[oxy(dimethylsilylene)] and methyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

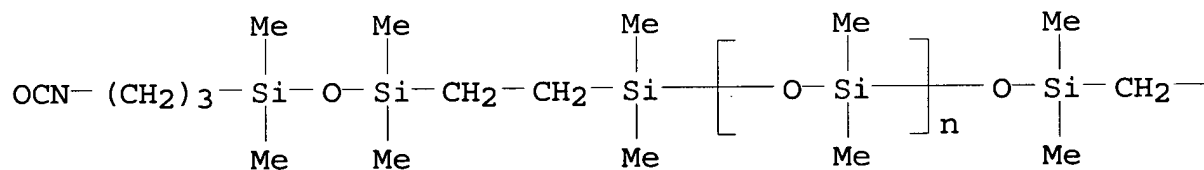
CM 1

CRN 179981-94-3

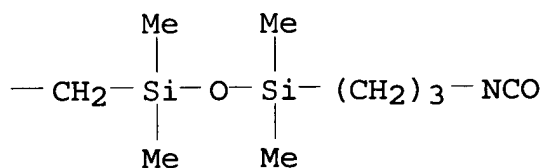
CMF (C2 H6 O Si)<sub>n</sub> C24 H56 N2 O5 Si6

CCI PMS

PAGE 1-A



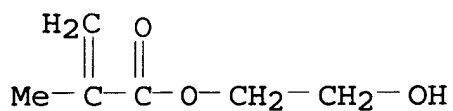
PAGE 1-B



CM 2

CRN 868-77-9

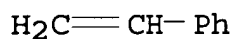
CMF C6 H10 O3



CM 3

CRN 100-42-5

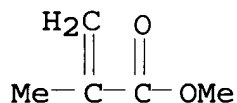
CMF C8 H8



CM 4

CRN 80-62-6

CMF C5 H8 O2



RN 179981-96-5 HCA

CN Hexanedioic acid, polymer with 1,2-ethanediol and .alpha.-[[2-[3-(3-isocyanatopropyl)-1,1,3,3-tetramethyldisiloxanyl]ethyl]dimethylsilyl]-.omega.-[[[2-[3-(3-isocyanatopropyl)-1,1,3,3-tetramethyldisiloxanyl]ethyl]dimethylsilyl]oxy]poly[oxy(dimethylsilylene)], block (9CI) (CA INDEX NAME)

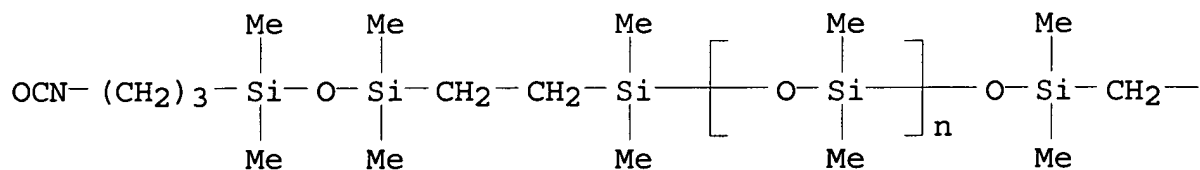
CM 1

CRN 179981-94-3

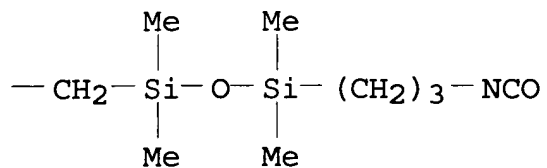
CMF (C2 H6 O Si)<sub>n</sub> C24 H56 N2 O5 Si6

CCI PMS

PAGE 1-A

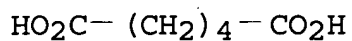


PAGE 1-B



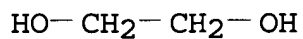
CM 2

CRN 124-04-9  
CMF C6 H10 O4



CM 3

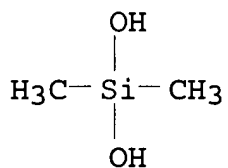
CRN 107-21-1  
CMF C2 H6 O2



RN 180184-63-8 HCA  
CN Hexanedioic acid, polymer with dimethylsilanediol and  
1,2-ethanediol, block (9CI) (CA INDEX NAME)

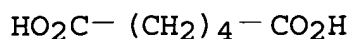
CM 1

CRN 1066-42-8  
CMF C2 H8 O2 Si



CM 2

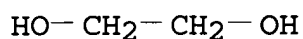
CRN 124-04-9  
CMF C6 H10 O4



CM 3

CRN 107-21-1

CMF C2 H6 O2



IT 156118-35-3DP, hydrogendimethylsilyl-terminated, reaction products with isocyanatosiloxanes and polymers 179981-88-5P 179981-89-6P 179981-91-0P 179981-93-2P 179981-94-3P

(manuf. of isocyanatosiloxanes for modification of resins with reduced gelation and off-setting and improved surface slippage)

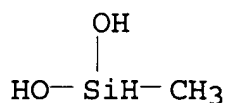
RN 156118-35-3 HCA

CN Silanediol, dimethyl-, polymer with methylsilanediol (9CI) (CA INDEX NAME)

CM 1

CRN 43641-90-3

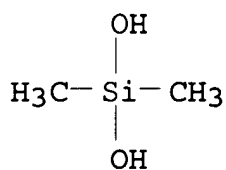
CMF C H6 O2 Si



CM 2

CRN 1066-42-8

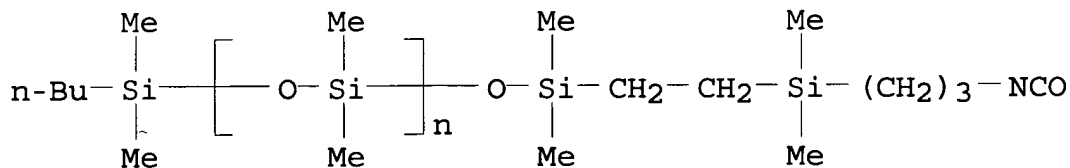
CMF C2 H8 O2 Si



RN 179981-88-5 HCA

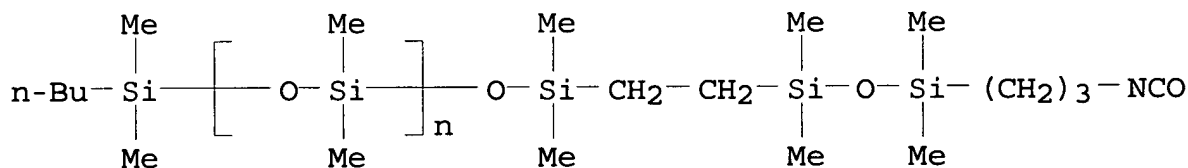
CN Poly[oxy(dimethylsilylene)], .alpha.-(butyldimethylsilyl)-.omega.-

[[[2-[(3-isocyanatopropyl)dimethylsilyl]ethyl]dimethylsilyl]oxy]-  
(9CI) (CA INDEX NAME)



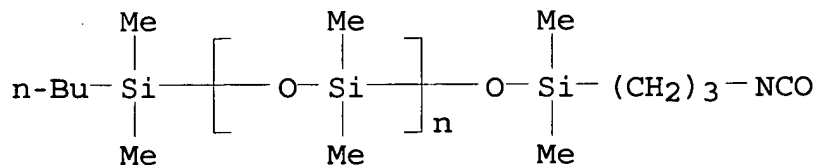
RN 179981-89-6 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-(butyldimethylsilyl)-.omega.-  
[[[2-[3-(3-isocyanatopropyl)-1,1,3,3-tetramethyldisiloxanyl]ethyl]di-  
methylsilyl]oxy]- (9CI) (CA INDEX NAME)



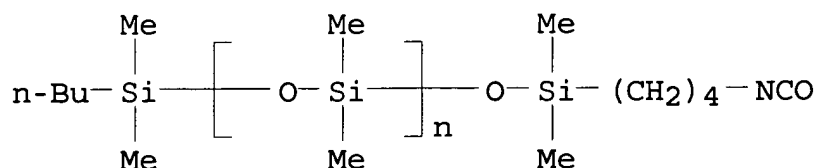
RN 179981-91-0 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-(butyldimethylsilyl)-.omega.-  
[[[3-isocyanatopropyl]dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)



RN 179981-93-2 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-(butyldimethylsilyl)-.omega.-  
[[[4-isocyanatobutyl]dimethylsilyl]oxy]- (9CI) (CA INDEX NAME)

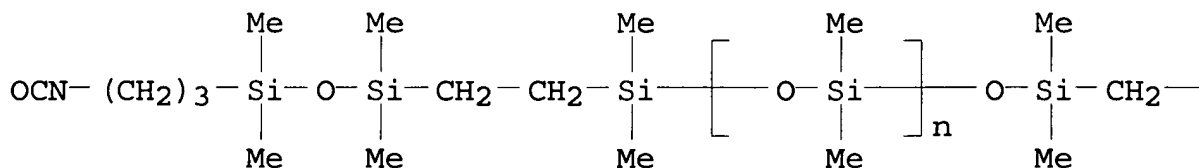


RN 179981-94-3 HCA

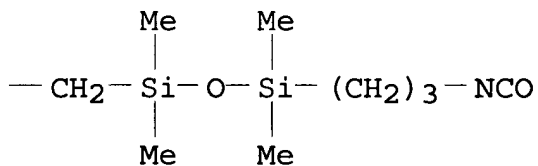
CN Poly[oxy(dimethylsilylene)], .alpha.-[[2-[3-(3-isocyanatopropyl)-  
1,1,3,3-tetramethyldisiloxanyl]ethyl]dimethylsilyl]-.omega.-[[[2-[3-  
(3-isocyanatopropyl)-1,1,3,3-tetramethyldisiloxanyl]ethyl]dimethylsi

yl]oxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

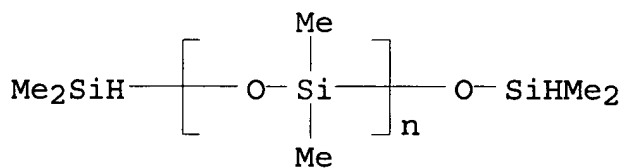


IT 115254-29-0 157696-57-6 179981-90-9  
179981-92-1

(starting material; manuf. of isocyanatosiloxanes for  
modification of resins with reduced gelation and off-setting and  
improved surface slippage)

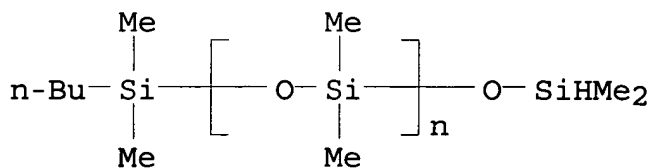
RN 115254-29-0 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-(dimethylsilyl)-.omega.-  
[(dimethylsilyl)oxy]- (9CI) (CA INDEX NAME)



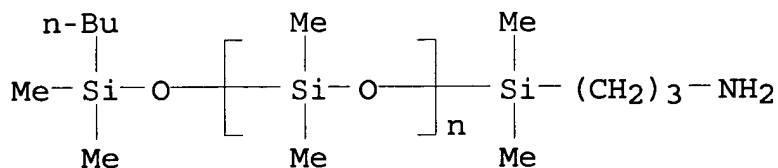
RN 157696-57-6 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-(butyldimethylsilyl)-.omega.-  
[(dimethylsilyl)oxy]- (9CI) (CA INDEX NAME)



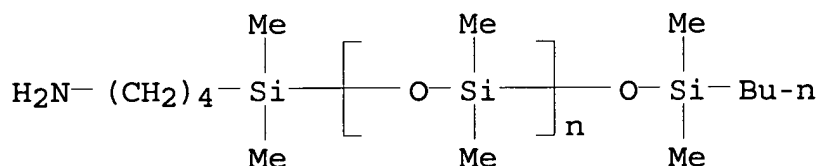
RN 179981-90-9 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-[(3-aminopropyl)dimethylsilyl]-  
.omega.-[(butyldimethylsilyl)oxy]- (9CI) (CA INDEX NAME)



RN 179981-92-1 HCA

CN Poly[oxy(dimethylsilylene)], .alpha.-[(4-aminobutyl)dimethylsilyl]-  
.omega.-[(butyldimethylsilyl)oxy]- (9CI) (CA INDEX NAME)



IC ICM C08G077-54

ICS C08G077-388; C08L101-02; C08G018-71; C08G018-77

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

IT Vinyl **acetal** polymers

(butyrals, di-Me siloxane-, graft, grafted S-lec BX 1; manuf. of isocyanatosiloxanes for modification of resins with reduced gelation and off-setting and improved surface slippage)

IT 80-62-6DP, polymers with isocyanatosiloxanes, hydroxyethyl methacrylate, and styrene 100-42-5DP, polymers with isocyanatosiloxanes, hydroxyethyl methacrylate, and Me methacrylate 107-21-1DP, 1,2-Ethanediol, polymers with isocyanatosiloxanes and adipic acid 124-04-9DP, Hexanedioic acid, polymers with isocyanatosiloxanes and ethylene glycol 868-77-9DP, polymers with isocyanatosiloxanes, Me methacrylate, and styrene 113979-34-3DP, reaction products with H Me di-Me siloxanes and polymers 162153-54-0P 179981-88-5DP, reaction products with vinyl **acetal** polymers 179981-89-6DP, reaction products with vinyl **acetal** polymers 179981-91-0DP, reaction products with vinyl **acetal** polymers 179981-93-2DP, reaction products with vinyl **acetal** polymers 179981-94-3DP, reaction products vinyl butyral polymers 179981-95-4P 179981-96-5P 180184-63-8P

(manuf. of isocyanatosiloxanes for modification of resins with reduced gelation and off-setting and improved surface slippage)

IT 156118-35-3DP, hydrogendimethylsilyl-terminated, reaction

products with isocyanatosiloxanes and polymers 179127-94-7DP,  
reaction products with H Me di-Me siloxanes and polymers

179981-88-5P 179981-89-6P 179981-91-0P

179981-93-2P 179981-94-3P

(manuf. of isocyanatosiloxanes for modification of resins with  
reduced gelation and off-setting and improved surface slippage)

IT 113979-34-3 115254-29-0 157696-57-6

179127-94-7 179981-90-9 179981-92-1

(starting material; manuf. of isocyanatosiloxanes for  
modification of resins with reduced gelation and off-setting and  
improved surface slippage)

L70 ANSWER 36 OF 45 HCA COPYRIGHT 2006 ACS on STN

124:262521 Poly(vinyl **acetals**) and their manufacture.

Minamino, Hiroko (Sekisui Chemical Co. Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 08020612 A2 19960123 Heisei, 5 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-154880 19940706.

AB Poly(vinyl alc.) having 49-91 mol% (A) isotactic diad OH-bonded  
ethylene (I) (vs. all I in main chain) is condensed with aldehydes  
in the presence of catalysts to give title polymers having 2-21 mol%  
(B) isotactic triad OH-bonded I with good moldability, useful for  
interlayers of glass films, coatings, and adhesives, etc. Thus,  
trimethylsilyl vinyl ether was hydrolyzed with aq. HCl soln. to give  
poly(vinyl alc.) having 91 mol% A, 33 g of which was mixed with  
water 344, aq. HCl 3, and n-butylaldehyde 18 g and acetalized at  
50.degree. for 2 h to give 67.1 mol%-acetalized poly(vinyl butyral)  
having 20.8 mol% B.

IT 27136-59-0P, Poly(trimethylsilyl vinyl ether)  
(in manuf. of moldable poly(vinyl **acetals**) from  
poly(vinyl alcs.) and aldehydes)

RN 27136-59-0 HCA

CN Silane, (ethenyloxy)trimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 6213-94-1

CMF C5 H12 O Si

Me<sub>3</sub>Si-O-CH=CH<sub>2</sub>

IC ICM C08F016-38

ICS C08F008-28

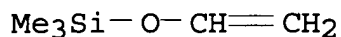
ICA C09D129-14; C09J129-14

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 42

ST polyvinyl alc vinyl **acetal** polymer manuf; butyraldehyde  
polyvinyl **acetal** manuf; flowability moldability polyvinyl

- acetal** manuf
- IT Acetalization catalysts  
(hydrochloric acid; in manuf. of moldable poly(vinyl **acetals**) from poly(vinyl alcs.) and aldehydes)
- IT Vinyl **acetal** polymers  
(butyrals, in manuf. of moldable poly(vinyl **acetals**) from poly(vinyl alcs.) and aldehydes)
- IT 7647-01-0, Hydrochloric acid, uses  
(acetalization catalysts; in manuf. of moldable poly(vinyl **acetals**) from poly(vinyl alcs.) and aldehydes)
- IT 24991-32-0P, Poly(vinyl benzoate) 25610-98-4P, Poly(benzyl vinyl ether) 25655-00-9P, Poly(tert-butyl vinyl ether) 26375-79-1P 26375-81-5P, Poly(vinyl p-bromobenzoate) 26375-85-9P, Poly(vinyl p-methylbenzoate) **27136-59-0P**, Poly(trimethylsilyl vinyl ether) 29594-99-8P, Poly(vinyl p-phenylbenzoate) 29760-53-0P, Poly(vinyl p-cyanobenzoate) 122247-37-4P, Poly(vinyl p-fluorobenzoate) 122247-39-6P, Poly(vinyl 3,4-dichlorobenzoate) (in manuf. of moldable poly(vinyl **acetals**) from poly(vinyl alcs.) and aldehydes)
- IT 123-72-8DP, Butyraldehyde, **cyclic acetals** with poly(vinyl alc.)  
(manuf. of moldable poly(vinyl **acetals**) from poly(vinyl alcs.) and aldehydes)
- L70 ANSWER 37 OF 45 HCA COPYRIGHT 2006 ACS on STN  
124:234015 Poly(vinyl **acetals**) and their manufacture.  
Minamino, Hiroko (Sekisui Chemical Co. Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 08020613 A2 **19960123** Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-154881 19940706.
- AB Poly(vinyl alc.) having 53.5-76 mol% (A) syndiotactic diad OH-bonded ethylene (I) (vs. all I in main chain) is condensed with aldehydes in the presence of catalysts to give title polymers having 4-25 mol% (B) syndiotactic triad OH-bonded I, useful for interlayers of safety glass, coatings, and adhesives, etc. Thus, trimethylsilyl vinyl ether was hydrolyzed with aq. HCl to give poly(vinyl alc.) having 68 mol% A, 33 g of which was mixed with water 344, aq. HCl 3, and n-butyraldehyde 18 g and acetalized at 50.degree. for 2 h to give 67.8 mol%-acetalized poly(vinyl butyral) having 16.8 mol% B.
- IT **27136-59-0P**, Poly(trimethylsilyl vinyl ether)  
(poly(vinyl **acetals**) with high syndiotacticity prepd. from poly(vinyl alcs.) and aldehydes)
- RN 27136-59-0 HCA
- CN Silane, (ethenyloxy)trimethyl-, homopolymer (9CI) (CA INDEX NAME)
- CM 1
- CRN 6213-94-1
- CMF C5 H12 O Si



- IC ICM C08F016-38  
ICS C08F008-28
- ICA C09D129-14; C09J129-14
- CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 38, 42
- ST polyvinyl alc vinyl **acetal** polymer manuf; polyvinyl **acetal** manuf butyraldehyde; syndiotactic ethylene vinyl **acetal** polymer; hydrochloric acid acetalization catalyst
- IT Acetalization catalysts  
(hydrochloric acid; poly(vinyl **acetals**) with high syndiotacticity prepd. from poly(vinyl alcs.) and aldehydes)
- IT Vinyl **acetal** polymers  
(butyrals, poly(vinyl **acetals**) with high syndiotacticity prepd. from poly(vinyl alcs.) and aldehydes)
- IT 7647-01-0, Hydrochloric acid, uses  
(acetalization catalysts; poly(vinyl **acetals**) with high syndiotacticity prepd. from poly(vinyl alcs.) and aldehydes)
- IT 123-72-8DP, Butylaldehyde, **cyclic acetals** with poly(vinyl alc.) 25567-89-9P, Poly(vinyl formate) 25655-00-9P, Poly(tert-butyl vinyl ether) 25748-85-0P, Poly(vinyl trifluoroacetate) 26715-88-8P, Poly(vinyl pivalate) **27136-59-0P**, Poly(trimethylsilyl vinyl ether)  
(poly(vinyl **acetals**) with high syndiotacticity prepd. from poly(vinyl alcs.) and aldehydes)
- L70 ANSWER 38 OF 45 HCA COPYRIGHT 2006 ACS on STN
- 124:118191 Preparation of "Sugar-Coated" Homopolymers and Multiblock ROMP Copolymers. Nomura, Kotohiro; Schrock, Richard R. (Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA, 02139, USA). *Macromolecules*, 29(2), 540-5 (English) 1996. CODEN: MAMOBX. ISSN: 0024-9297. Publisher: American Chemical Society.
- AB Ring-opened homopolymers of 5-norbornene-2-carboxylates or 5-norbornene-2,3-dicarboxylates that contain **acetal**-protected sugars 1,2:3,4-di-O-isopropylidene-.alpha.-D-galactopyranos-6-O-yl 5-norbornene-2-carboxylate (I), bis(1,2:3,4-di-O-isopropylidene-.alpha.-D-galactopyranos-6-O-yl) 5-norbornene-trans-2,3-dicarboxylate (II), 5-norbornene-2-carboxylic acid ester contg. 2,3-O-isopropylidene-D-ribonic .gamma.-lactone, or 3,4:5,6-di-O-isopropylidene-.alpha.-D-mannofuranos-1-O-yl 5-norbornene-2-carboxylate were prepd. in toluene using Mo(CHCMe2Ph)(N-2,6-i-Pr2C6H3)(O-t-Bu)2 as the initiator. These homopolymers showed narrow mol. wt. distributions (PDI = 1.02-1.25) and a mol. wt. dependent on the no. of monomers added. Di-, tri-,

and tetrablock copolymers contg. 1-4, methyltetracyclododecene or trans-2,3-bis(((trimethylsilyl)oxy)methyl)-norborn-5-ene were also prep'd. and found to have low polydispersities ( $M_w/M_n = 1.03-1.25$ ). The **cyclic acetal** in polymers contg. I or II could be removed using  $CF_3CO_2H/H_2O$  (9/1 vol./vol., 15 min, 22.degree.) to afford the corresponding water-sol. polymers contg. the parent sugar.

IT 173009-92-2P 173009-93-3P 173009-94-4P  
173009-95-5P 173009-96-6P

(prepn. of sugar-contg. homopolymers and multiblock ROMP copolymers)

RN 173009-92-2 HCA

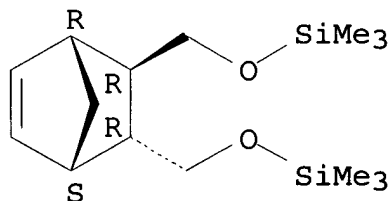
CN .alpha.-D-Galactopyranose, 1,2:3,4-bis-O-(1-methylethylidene)-, bicyclo[2.2.1]hept-5-ene-2-carboxylate, polymer with (2-endo,3-exo)-[bicyclo[2.2.1]hept-5-ene-2,3-diylbis(methyleneoxy)]bis[trimethylsilane], block (9CI) (CA INDEX NAME)

CM 1

CRN 173009-91-1

CMF C15 H30 O2 Si2

Relative stereochemistry.

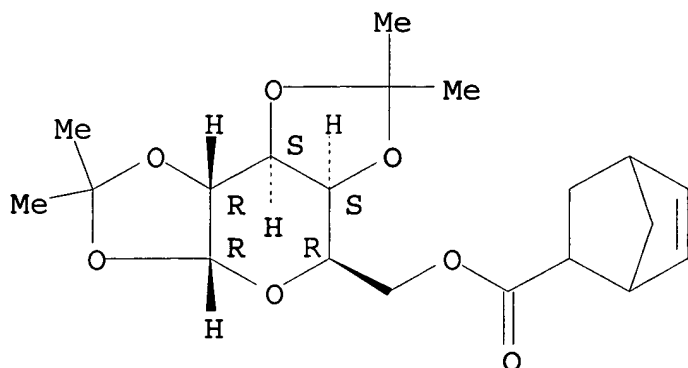


CM 2

CRN 172954-94-8

CMF C20 H28 O7

Absolute stereochemistry.



RN 173009-93-3 HCA

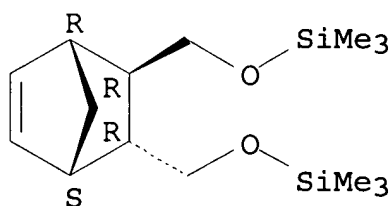
CN .alpha.-D-Galactopyranose, 1,2:3,4-bis-O-(1-methylethylidene)-, bicyclo[2.2.1]hept-5-ene-2-carboxylate, polymer with (2-endo,3-exo)-[bicyclo[2.2.1]hept-5-ene-2,3-diylbis(methyleneoxy)]bis[trimethylsilane] and 1,2,3,4,4a,5,8,8a-octahydro-2-methyl-1,4:5,8-dimethanonaphthalene, block (9CI) (CA INDEX NAME)

CM 1

CRN 173009-91-1

CMF C15 H30 O2 Si2

Relative stereochemistry.

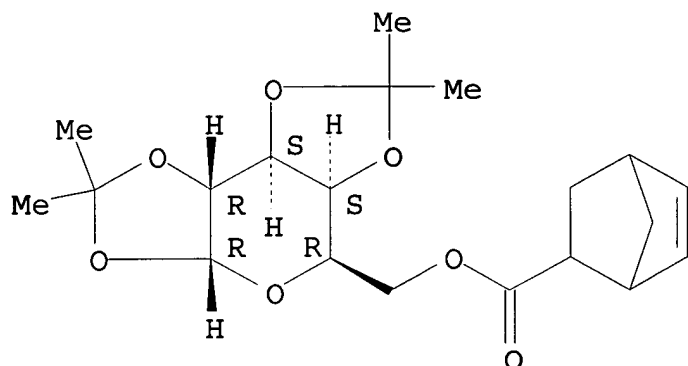


CM 2

CRN 172954-94-8

CMF C20 H28 O7

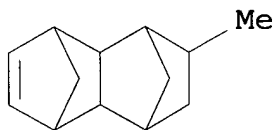
Absolute stereochemistry.



CM 3

CRN 21681-47-0

CMF C13 H18



RN 173009-94-4 HCA

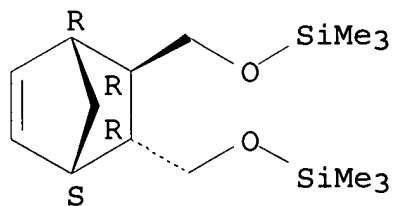
CN .alpha.-D-Galactopyranose, 1,2:3,4-bis-O-(1-methylethylidene)-, bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylate (2:1), polymer with (2-endo,3-exo)-[bicyclo[2.2.1]hept-5-ene-2,3-diylbis(methyleneoxy)]bis[trimethylsilane] and 1,2,3,4,4a,5,8,8a-octahydro-2-methyl-1,4:5,8-dimethanonaphthalene, block (9CI) (CA INDEX NAME)

CM 1

CRN 173009-91-1

CMF C15 H30 O2 Si2

Relative stereochemistry.



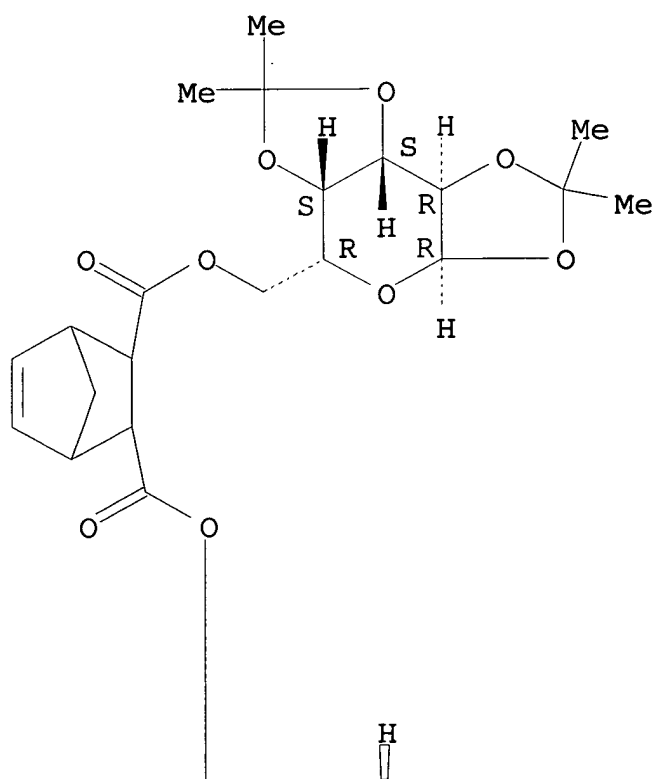
CM 2

CRN 172954-96-0

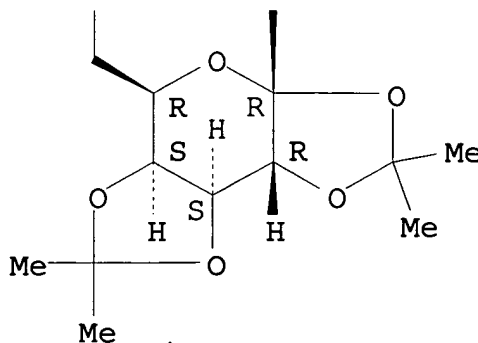
CMF C33 H46 O14

Absolute stereochemistry.

PAGE 1-A



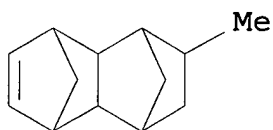
PAGE 2-A



CM 3

CRN 21681-47-0

CMF C13 H18



RN 173009-95-5 HCA

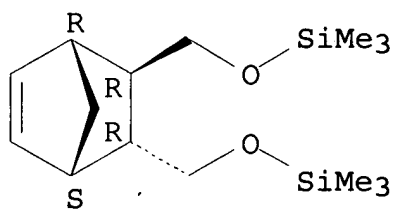
CN .alpha.-D-Galactopyranose, 1,2:3,4-bis-O-(1-methylethylidene)-, bicyclo[2.2.1]hept-5-ene-2-carboxylate, polymer with (2-endo,3-exo)-[bicyclo[2.2.1]hept-5-ene-2,3-diylbis(methyleneoxy)]bis[trimethylsilane], 1,2:3,4-bis-O-(1-methylethylidene)-.alpha.-D-galactopyranose bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylate (2:1) and 1,2,3,4,4a,5,8,8a-octahydro-2-methyl-1,4:5,8-dimethanonaphthalene, block (9CI) (CA INDEX NAME)

CM 1

CRN 173009-91-1

CMF C15 H30 O2 Si2

Relative stereochemistry.



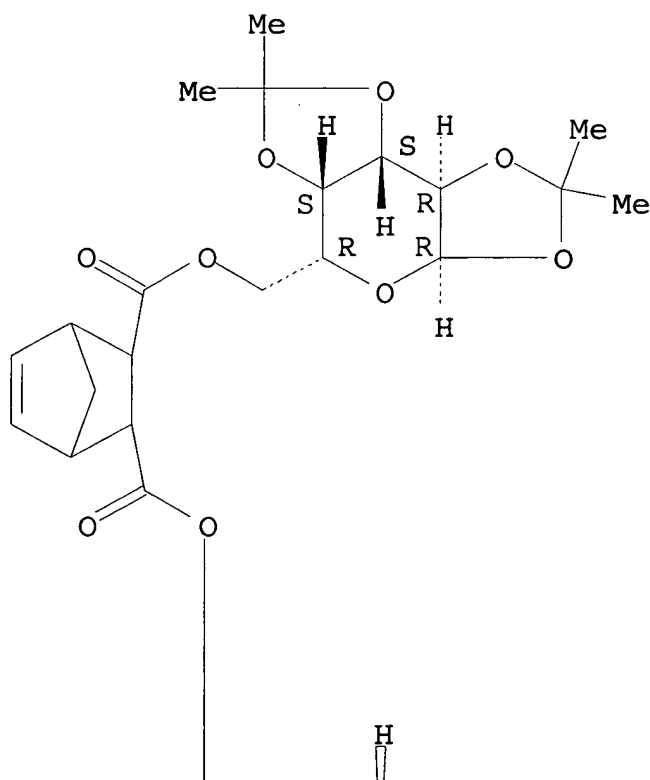
CM 2

CRN 172954-96-0

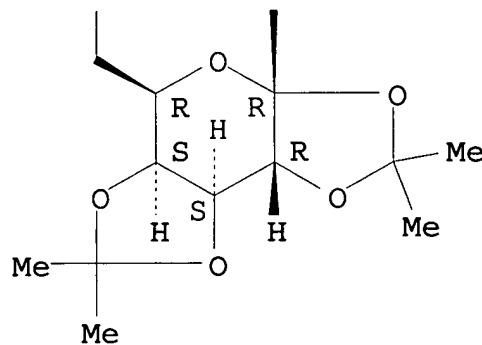
CMF C33 H46 O14

Absolute stereochemistry.

PAGE 1-A



PAGE 2-A

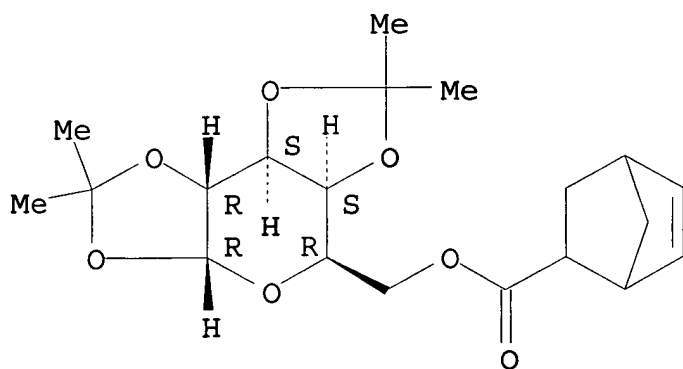


CM 3

CRN 172954-94-8

CMF C20 H28 O7

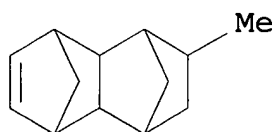
Absolute stereochemistry.



CM 4

CRN 21681-47-0

CMF C13 H18



RN 173009-96-6 HCA

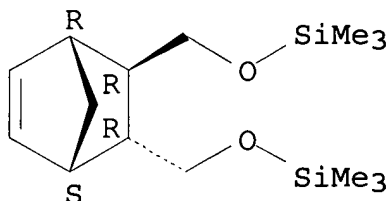
CN Silane, [bicyclo[2.2.1]hept-5-ene-2,3-diylbis(methyleneoxy)]bis[trimethyl-, (2-endo,3-exo)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 173009-91-1

CMF C15 H30 O2 Si2

Relative stereochemistry.



CC 35-7 (Chemistry of Synthetic High Polymers)

IT 172954-93-7P 172954-95-9P 172954-97-1P 172954-99-3P

172955-00-9P 172955-01-0P 172955-02-1P 172955-03-2P

172955-04-3P 172955-06-5P 172955-07-6P 172955-08-7P

**173009-92-2P 173009-93-3P 173009-94-4P**

**173009-95-5P 173009-96-6P**

(prepn. of sugar-contg. homopolymers and multiblock ROMP copolymers)

L70 ANSWER 39 OF 45 HCA COPYRIGHT 2006 ACS on STN

121:84192 Compounds with polymerizable **side chains**

and light-controlling liquid crystal devices containing the same.

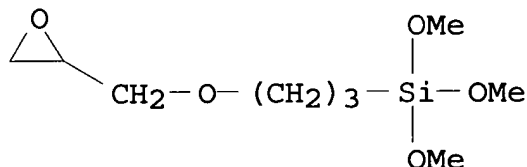
Murakami, Kazuo; Yanagida, Yasuo; Yamaguchi, Hisao; Kuryama, Takeshi; Aizawa, Masao; Ogawa, Hiroshi (Dainippon Ink & Chemicals, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 06032761 A2

**19940208** Heisei, 12 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1993-119792 19930521. PRIORITY: JP 1992-128765 19920521.

AB The title compds. useful in the devices with high transparent-opaque contrast at low operating voltage have a general formula  $[CH_2:CR_3CO_2(R_2YCH_2)CHCH_2X]_nR_1$  [ $R_1, R_2$  = aliph., alicyclic, arom., or heterocyclic group;  $R_3$  = H, Me;  $X$  = O,  $CO_2$ ;  $Y$  = O,  $CO_2$ , (cyclic) N;  $n$  = 2-4]. Cardura E-10 was treated with dodecanedioic acid in the presence of  $PhCH_2NMe_2$ , then with acryloyl chloride in the presence of  $Et_3N$  and phenothiazine, and worked up to give an acrylate. A mixt. from 80% PN 005 liq. crystal, 20% the above acrylate, and 0.4% benzyl di-Me **ketal** was placed between ITO electrode-coated glass plates and UV-irradiated to give a 11.4  $\mu$ -thick light control device showing light transmittance 3.2% at 0 V and 89.6% max. with voltage application.

IT 2530-83-8D, esters with dodecanedioic acid and acryloyl chloride, polymers  
 (in liq.-cryst. light control devices, with high contrast)  
 RN 2530-83-8 HCA  
 CN Silane, trimethoxy[3-(oxiranylmethoxy)propyl]- (9CI) (CA INDEX NAME)



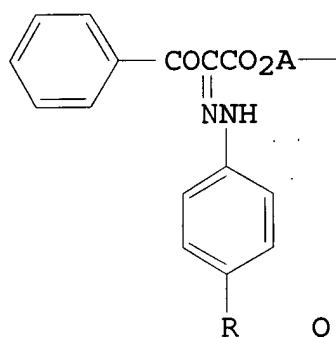
IC ICM C07C069-54  
 ICS C07C219-08; C08F020-28; C08F020-36; C09K019-38; G02F001-1333  
 CC 35-2 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 73, 74  
 IT 57-11-4D, Octadecanoic acid, esters with ethylene glycol diglycidyl ether and acryloyl chloride, polymers 111-20-6D, Decanedioic acid, esters with glycidyl tert-decanoate and acryloyl chloride, polymers 122-60-1D, esters with dodecanedioic acid and acryloyl chloride, polymers 124-04-9D, Hexanedioic acid, esters with glycidyl tert-decanoate and acryloyl chloride, polymers 142-62-1D, Caproic acid, esters with propylene glycol diglycidyl ether and acryloyl chloride, polymers 144-62-7D, Ethanedioic acid, esters with glycidyl tert-decanoate and acryloyl chloride, polymers 693-23-2D, Dodecanedioic acid, esters with glycidyl compds. and acryloyl chloride, polymers 814-68-6D, Acryloyl chloride, esters with glycidyl compds. and dicarboxylic acids, polymers 930-37-0D, Glycidyl methyl ether, esters with dodecanedioic acid and acryloyl chloride, polymers 2224-15-9D, Ethylene glycol diglycidyl ether, esters with stearic acid and acryloyl chloride, polymers 2426-08-6D, Butyl glycidyl ether, esters with dodecanedioic acid and acryloyl chloride, polymers 2461-15-6D, 2-Ethylhexyl glycidyl ether, esters with dodecanedioic acid and acryloyl chloride, polymers 2461-18-9D, Glycidyl lauryl ether, esters with dodecanedioic acid and acryloyl chloride, polymers 2461-42-9D, Glycidyl 1-naphthyl ether, esters with dodecanedioic acid and acryloyl chloride, polymers 2530-83-8D, esters with dodecanedioic acid and acryloyl chloride, polymers 5380-87-0D, Furfuryl glycidyl ether, esters with dodecanedioic acid and acryloyl chloride, polymers 6270-19-5D, 4-Glycidylmorpholine, esters with dodecanedioic acid and acryloyl chloride, polymers 16096-30-3D, Propylene glycol diglycidyl ether, esters with caproic acid and acryloyl chloride, polymers 26761-45-5D, Cardura E 10, esters with dicarboxylic acids and acryloyl chloride, polymers 59313-58-5D, Glycidyl p-tert-butylbenzoate, esters with dodecanedioic acid and

acryloyl chloride, polymers  
(in liq.-cryst. light control devices, with high contrast)

L70 ANSWER 40 OF 45 HCA COPYRIGHT 2006 ACS on STN

118:202222 Liquid-crystal devices with optically and thermally structure-changeable alignment-controlling films from .beta.-keto acid moiety-containing polymers. Ichimura, Kunihiro; Kawanishi, Yuji; Seki, Takahiro; Tamaoki, Takashi; Yamamura, Shigeo (Agency of Industrial Sciences and Technology, Japan). Jpn. Kokai Tokkyo Koho JP 04284445 A2 19921009 Heisei, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-72064 19910313.

GI



AB Optical devices, which have polymer films from poly(meth)acrylates, poly(vinyl **acetals**), poly(vinyl ethers), or polysiloxanes having .beta.-keto acid moiety Q [R = alkyl, alkoxy, alkylamino; A = (CH<sub>2</sub>)<sub>n</sub>, .gtoreq.1 CH<sub>2</sub> may be replaced with CO<sub>2</sub>, CONH, NH, CO] as the **side chain** in contact with a liq. crystal layer, form patterns by light or heat and the optically or thermally formed pattern is erased by heat or light, resp. Light- or heat-induced structural change in the .beta.-keto acid moiety results in change between homogeneous orientation and homeotropic orientation of liq. crystal mols. The optical devices are useful for optical memory devices and light-addressing display devices.

IT 147237-83-0P 147237-84-1P 147237-85-2P

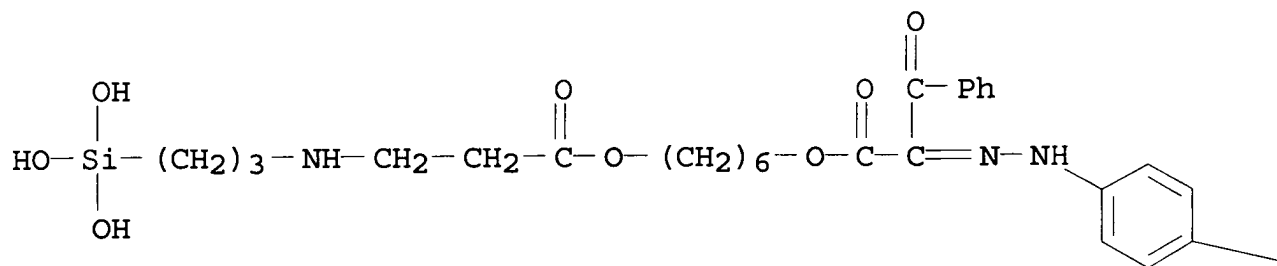
147237-86-3P 147237-87-4P 147237-88-5P

(prepn. and polymn. of, photochromic polymers for alignment-controlling films for liq.-crystal devices from)

RN 147237-83-0 HCA

CN .beta.-Alanine, N-[3-(trihydroxysilyl)propyl]-, 6-[2-[(4-hexylphenyl)hydrazono]-1,3-dioxo-3-phenylpropoxy]hexyl ester (9CI)  
(CA INDEX NAME)

PAGE 1-A



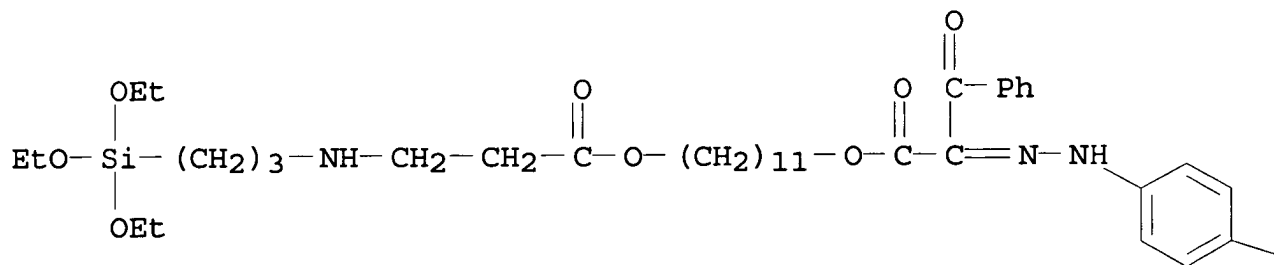
PAGE 1-B

— (CH<sub>2</sub>)<sub>5</sub> — Me

RN 147237-84-1 HCA

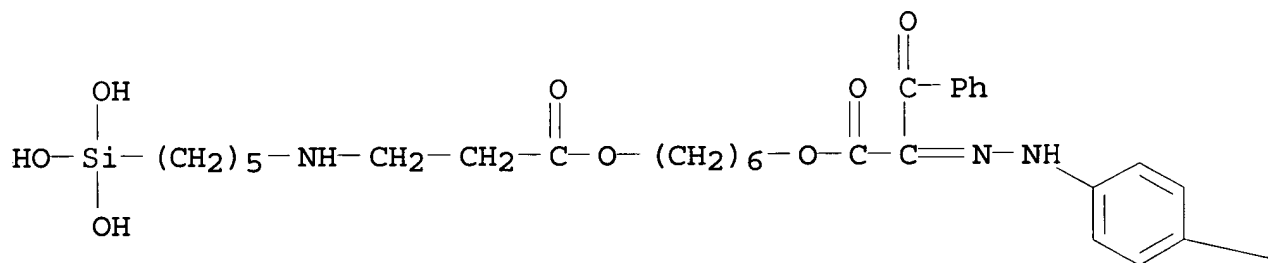
CN .beta.-Alanine, N-[3-(triethoxysilyl)propyl]-, 11-[2-[(4-hyxylphenyl)hydrazono]-1,3-dioxopropoxy]undecyl ester (9CI) (CA INDEX NAME)

PAGE 1-A

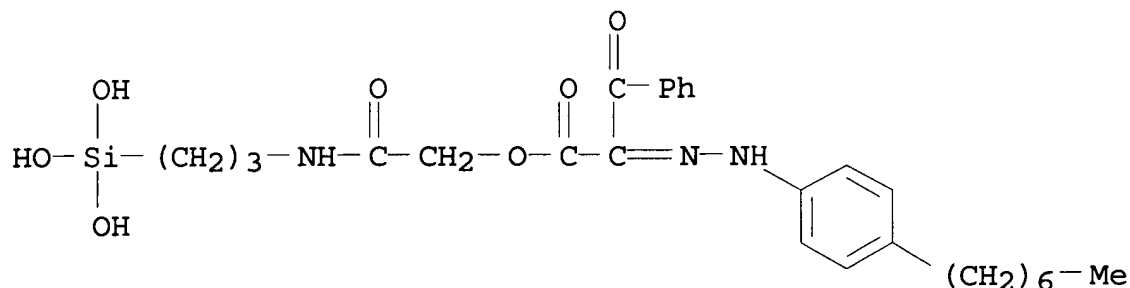


$(\text{CH}_2)_5-\text{Me}$ 

PAGE 1-A

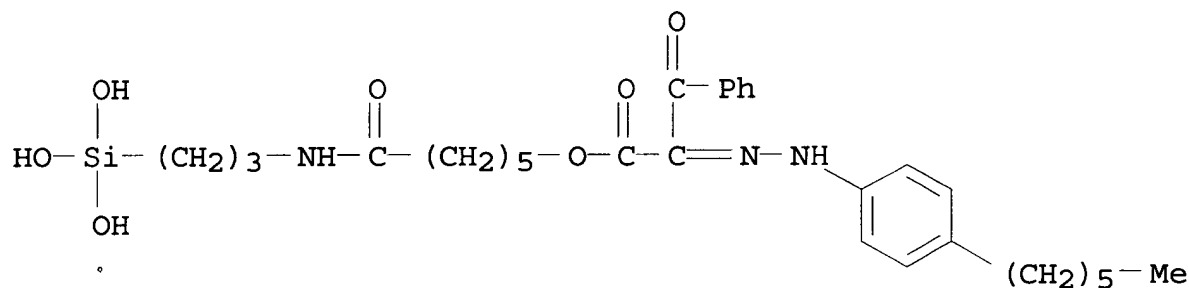
 $(\text{CH}_2)_5-\text{Me}$ 

RN	147237-86-3	HCA
CN	Benzenepropanoic acid, .alpha.-[(4-heptylphenyl)hydrazono]-.beta.-oxo-, 2-oxo-2-[[3-(trihydroxysilyl)propyl]amino]ethyl ester (9CI) (CA INDEX NAME)	



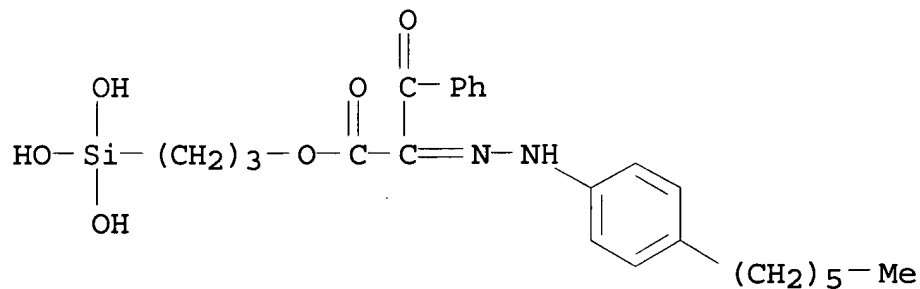
RN 147237-87-4 HCA

CN Benzenepropanoic acid, .alpha.-[(4-hexylphenyl)hydrazono]-.beta.-oxo-  
 , 6-oxo-6-[[3-(trihydroxysilyl)propyl]amino]hexyl ester (9CI) (CA  
 INDEX NAME)



RN 147237-88-5 HCA

CN Benzenepropanoic acid, .alpha.-[(4-hexylphenyl)hydrazono]-.beta.-oxo-  
 , 3-(trihydroxysilyl)propyl ester (9CI) (CA INDEX NAME)



IT 147025-80-7P 147025-82-9P

(prepn. of, for photochromic alignment-controlling films for  
 liq.-crystal display devices)

RN 147025-80-7 HCA

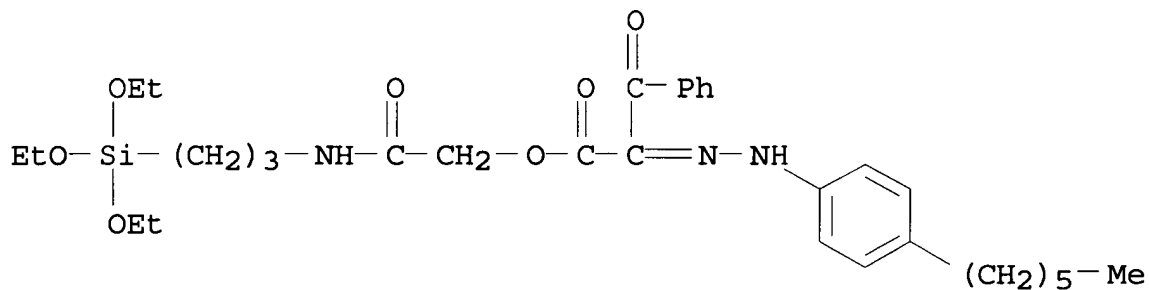
CN Benzenepropanoic acid, .alpha.-[(4-hexylphenyl)hydrazono]-.beta.-oxo-  
 , 2-oxo-2-[[3-(triethoxysilyl)propyl]amino]ethyl ester, homopolymer

(9CI) (CA INDEX NAME)

CM 1

CRN 147025-79-4

CMF C32 H47 N3 O7 Si



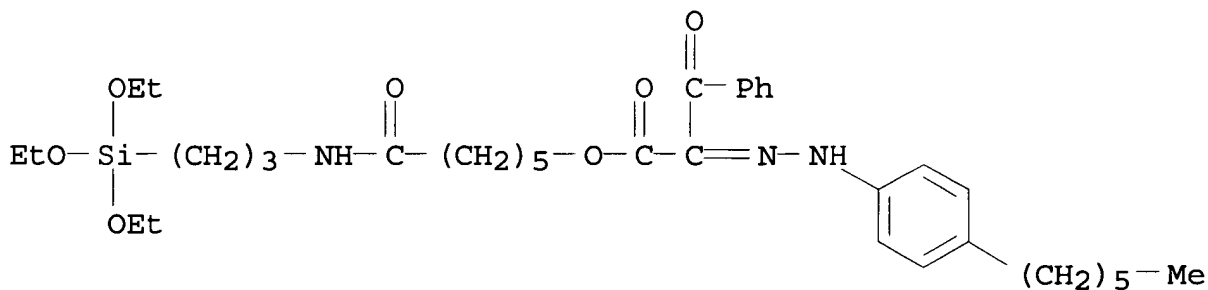
RN 147025-82-9 HCA

CN Benzenepropanoic acid, .alpha.-[(4-hexylphenyl)hydrazono]-.beta.-oxo-  
 , 6-oxo-6-[[3-(triethoxysilyl)propyl]amino]hexyl ester, homopolymer  
 (9CI) (CA INDEX NAME)

CM 1

CRN 147025-81-8

CMF C36 H55 N3 O7 Si

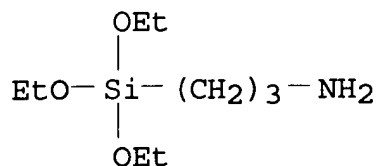


IT 919-30-2 1067-48-7

(reaction of, in prepn. of photochromic polymers for  
 alignment-controlling films for liq.-crystal display devices)

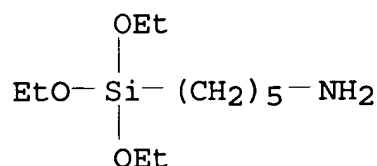
RN 919-30-2 HCA

CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)



RN 1067-48-7 HCA

CN 1-Pentanamine, 5-(triethoxysilyl)- (9CI) (CA INDEX NAME)



IC ICM G03C001-73

ICS B41M005-26; G02F001-13; G02F001-133; G02F001-1337; G11B007-24

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

IT 147025-75-0P 147025-77-2P 147025-85-2P 147041-43-8P

147237-83-0P 147237-84-1P 147237-85-2P

147237-86-3P 147237-87-4P 147237-88-5P

(prepn. and polymn. of, photochromic polymers for alignment-controlling films for liq.-crystal devices from)

IT 147237-89-6P 147237-90-9P

(prepn. and reaction of, with poly(vinyl alc. or acetal), photochromic polymers for alignment-controlling films for liq.-crystal devices from)

IT 147025-70-5P 147025-72-7P 147025-74-9P 147025-76-1P

147025-78-3P 147025-80-7P 147025-82-9P

147025-84-1P 147025-86-3P 147041-44-9P

(prepn. of, for photochromic alignment-controlling films for liq.-crystal display devices)

IT 94-02-0, Benzoylacetic acid ethyl ester 814-68-6, 2-Propenoyl chloride 919-30-2 920-46-7, Methacrylic chloride

1067-48-7 4224-70-8, 6-Bromocaproic acid 5292-43-3,

tert-Butyl bromoacetate 16245-79-7, p-Octylaniline 33228-45-4,

p-Hexylaniline 39905-44-7, p-Heptyloxylaniline 147237-81-8

147237-91-0

(reaction of, in prepn. of photochromic polymers for alignment-controlling films for liq.-crystal display devices)

L70 ANSWER 41 OF 45 HCA COPYRIGHT 2006 ACS on STN

118:103591 Water-curable release agents based on isocyanate-silane

modified resin. Hanada, Kazuyuki; Misaizu, Iwao; Saito, Masashi; Torii, Katsutoshi; Katsumi, Kuriyama (Dainichiseika Color and Chemicals Mfg. Co. Ltd., Japan; Ukima Color and Chemicals Mfg. Co. Ltd.). Eur. Pat. Appl. EP 492598 A1 **19920701**, 14 pp.

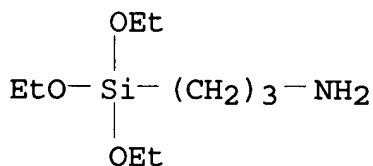
DESIGNATED STATES: R: BE, DE, FR, GB, IT. (English). CODEN: EPXXDW. APPLICATION: EP 1991-122172 19911223. PRIORITY: JP 1990-415405 19901228.

AB The title release agents for use in adhesive tape, label, or seal products are resins modified with silane coupling agents contg. .gtoreq.1 free isocyanate group and .gtoreq.1 hydrolyzable silyl group in the **side chain**. Thus, 300 parts silicone-polyvinyl formal (OH no. 42 mg KOH/g) was heated with 21 parts modifier HMDI trimer-.gamma.-mercaptopropyltrimethoxysilane adduct at 80.degree. for 8 h and the solids adjusted to 20% to give a soln., 100 parts of which were mixed with MEK 100, water 1, and Sn octylate 0.01 part to give a release agent. A PVC film coated with the release agent showed 180.degree. peeling force (to acrylic adhesive tape, 20 mm) 22 (1 day; 23.degree.; 46% relative humidity) and 25 g (3 days; 40.degree.; 90%).

IT **919-30-2DP**, 3-Aminopropyltriethoxysilane, isocyanate adduct, reaction product with hydroxy-contg. silicone resin **4420-74-0DP**, .gamma.-Mercaptopropyltrimethoxysilane, isocyanate adduct, reaction product with hydroxy-contg. silicone resin **24801-88-5DP**, reaction product with polyester-silicone resin **38280-61-4DP**, N-Phenyl-.gamma.-aminopropyltriethoxysilane, isocyanate adduct, reaction product with hydroxy-contg. silicone resin (release agent, water-curable, prepn. of)

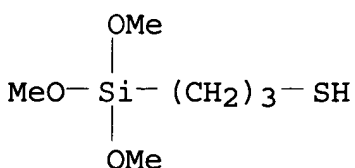
RN 919-30-2 HCA

CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)

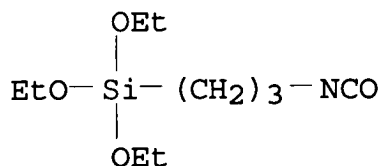


RN 4420-74-0 HCA

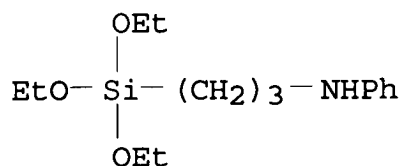
CN 1-Propanethiol, 3-(trimethoxysilyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 24801-88-5 HCA  
 CN Silane, triethoxy(3-isocyanatopropyl)- (9CI) (CA INDEX NAME)



RN 38280-61-4 HCA  
 CN Benzenamine, N-[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



IC ICM C08G018-71

ICS C09J007-02

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 42

IT Siloxanes and Silicones, compounds

(poly(vinyl **acetal**)-, reaction products, with isocyanate- and hydrolyzable group-contg. coupling agents, for water-curable release agents)

IT Polyesters, compounds

Urethane polymers, compounds

Vinyl **acetal** polymers

(siloxane-, reaction products, with isocyanate- and hydrolyzable group-contg. coupling agents, for water-curable release agents)

IT 77-99-6DP, Trimethylolpropane, HMDI and

phenylaminopropyltriethoxysilane adduct, reaction product with hydroxy-contg. silicone resin 822-06-0DP, HMDI, trimethylolpropane and phenylaminopropyltriethoxysilane adduct, reaction product with hydroxy-contg. silicone resin 919-30-2DP,

3-Aminopropyltriethoxysilane, isocyanate adduct, reaction product with hydroxy-contg. silicone resin 4035-89-6DP, aminopropyltriethoxysilane adduct, reaction product with hydroxy-contg. silicone resin 4420-74-0DP,

.gamma.-Mercaptopropyltrimethoxysilane, isocyanate adduct, reaction product with hydroxy-contg. silicone resin 24801-88-5DP, reaction product with polyester-silicone resin 24801-88-5DP

, KBM-9007, reaction product with polyurethane-silicone resin 28574-90-5DP, mercaptopropyltrimethoxysilane adduct, reaction

product with hydroxy-contg. silicone resin 37293-38-2DP, Coronate HL, phenylaminopropyltriethoxysilane adduct, reaction product with hydroxy-contg. silicone resin **38280-61-4DP**, N-Phenyl-.gamma.-aminopropyltriethoxysilane, isocyanate adduct, reaction product with hydroxy-contg. silicone resin 81544-19-6DP, Duranate 24A100, aminopropyltriethoxysilane adduct, reaction product with hydroxy-contg. silicone resin 86472-86-8DP, Coronate EH, mercaptopropyltrimethoxysilane adduct, reaction product with hydroxy-contg. silicone resin  
(release agent, water-curable, prepn. of)

L70 ANSWER 42 OF 45 HCA COPYRIGHT 2006 ACS on STN

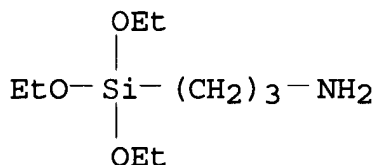
118:70225 Thermal ink-transfer recording material. Hanada, Kazuyuki; Misaizu, Iwao; Saito, Masashi; Torii, Katsutoshi; Kuriyama, Katsumi (Dainichiseika Color and Chemicals Mfg. Co., Ltd., Japan; Ukima Colour and Chemicals Mfg. Co. Ltd.). Eur. Pat. Appl. EP 492599 A1 **19920701**, 11 pp. DESIGNATED STATES: R: BE, DE, FR, GB, IT. (English). CODEN: EPXXDW. APPLICATION: EP 1991-122173 19911223. PRIORITY: JP 1990-415441 19901228.

AB A thermal ink-transfer recording material comprises a base sheet, a thermal ink-transfer recording layer contg. a pigment (such as C black), waxes, and polybutene on one side of the base sheet, and a heat-resistant layer contg. a resin modified with a silane coupling agent on the other side of the base sheet, wherein the coupling agent contains .gtoreq.1 free isocyanate group, the resin contains .gtoreq.1 hydrolyzable silyl group in the **side chains**, and the heat-resistant layer is curable with water.

IT **919-30-2D**, 3-Aminopropyltriethoxysilane, reaction products with hexamethylene diisocyanate-water adducts **4420-74-0D**, .gamma.-Mercaptopropyltrimethoxysilane, reaction products with hexamethylene diisocyanate trimer **38280-61-4D**, N-Phenyl-.gamma.-aminopropyltriethoxysilane, reaction products with hexamethylene diisocyanate-trimethylolpropane adducts (siloxane copolymers modified with, heat-resistant layers contg., for thermal ink-transfer recording materials)

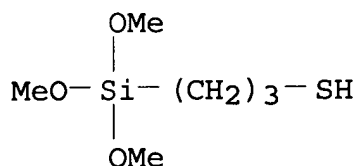
RN 919-30-2 HCA

CN 1-Propanamine, 3-(triethoxysilyl)- (9CI) (CA INDEX NAME)



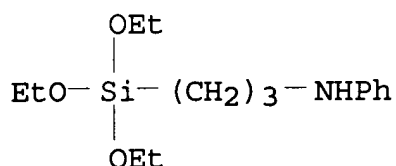
RN 4420-74-0 HCA

CN 1-Propanethiol, 3-(trimethoxysilyl)- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 38280-61-4 HCA

CN Benzenamine, N-[3-(triethoxysilyl)propyl]- (9CI) (CA INDEX NAME)



IC ICM B41M005-40

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Siloxanes and Silicones, uses

(copolymers with vinyl **acetals**, modified with isocyanate group-contg. silane coupling agents, heat-resistant layers contg., for thermal-ink-transfer recording materials)

IT Vinyl **acetal** polymers

(butyrals, siloxane-, modified with isocyanate group-contg. silane coupling agents, heat-resistant layers contg., for thermal ink-transfer recording materials)

IT Vinyl **acetal** polymers

(formals, siloxane-, modified with isocyanate group-contg. silane coupling agents, heat-resistant layers contg., for thermal ink-transfer recording materials)

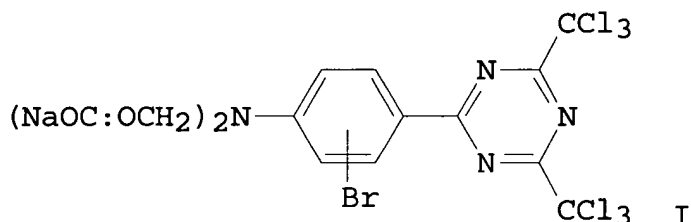
IT **919-30-2D**, 3-Aminopropyltriethoxysilane, reaction products with hexamethylene diisocyanate-water adducts **4420-74-0D**, .gamma.-Mercaptopropyltrimethoxysilane, reaction products with hexamethylene diisocyanate trimer 37293-38-2D, Coronate HL, reaction products with Ph aminopropyltriethoxysilane **38280-61-4D**, N-Phenyl-.gamma.-aminopropyltriethoxysilane, reaction products with hexamethylene diisocyanate-trimethylolpropane adducts 81544-19-6D, Duranate 24A100, reaction products with aminopropyltriethoxysilane 86472-86-8D, Coronate EH, reaction products with mercaptopropyltrimethoxysilane (siloxane copolymers modified with, heat-resistant layers contg., for thermal ink-transfer recording materials)

L70 ANSWER 43 OF 45 HCA COPYRIGHT 2006 ACS on STN

111:15385 Photosensitive lithographic plate material with silicone

rubber layer for plate requiring no fountain solution. Azuma, Tatsuji; Kita, Nobuyuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 63280250 A2 19881117 Showa, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-115551 19870512.

GI



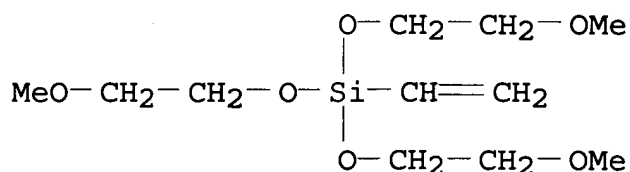
AB The lithog. plate-making material comprising a substrate, a photosensitive layer, and a laminated layer of silicone rubber uses a photosensitive layer which contains a water-sol. photosensitive composite consisting of (1) a water-sol. polymer with mol. wt. 5000-1,000,000 having a photopolymerizable or photocrosslinkable olefinic unsatd. double bond on its **side chain**, and (2) a photopolymer. initiator and/or a photosensitizer. It provides a presensitized lithog. plate material having an extended shelf life, developability by simple water treatment (wash-off type), and good ink-selectivity that eliminates the necessity of using a fountain soln. Thus, a photosensitive primer mixt. was coated on an Al plate, then a part of the photosensitive compn. was dild. with pentaerythritol triacrylate, allyl methacrylate-K methacrylate copolymer (mol. wt. 40,000), S-Lec W-201 [water-sol. poly(vinyl **acetal**)], silica, the compd. I, water, and MeOH, and the mixt. was overcoated on the primer coating, and, subsequently, a silicone rubber soln. was overcoated thereon to give a presensitized plate.

IT 1067-53-4

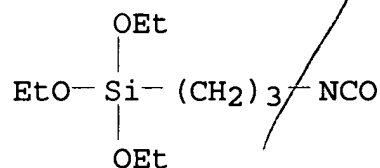
(lithog. plate with photosensitive layer contg.)

RN 1067-53-4 HCA

CN 2,5,7,10-Tetraoxa-6-silaundecane, 6-ethenyl-6-(2-methoxyethoxy)-(9CI) (CA INDEX NAME)



- IC ICM G03F007-02  
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 IT Vinyl **acetal** polymers  
 (butyrals, lithog. plate with photosensitive layer contg., S-Lec W201)  
 IT **1067-53-4** 3524-68-3 26570-48-9, Polyethylene glycol diacrylate 121188-64-5 121188-65-6 121188-66-7 121188-67-8 121188-68-9  
 (lithog. plate with photosensitive layer contg.)  
 L70 ANSWER 44 OF 45 HCA COPYRIGHT 2006 ACS on STN  
 108:39226 Silane-containing polymer compositions. Kuwabara, Minoru; Manabe, Katsuaki (Sekisui Chemical Co. Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 62096553 A2 **19870506** Showa, 5 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1985-236916 19851023.  
 AB Title compns. with good adhesion at high temp., useful in prep. adhesives and coatings for metals, comprise modified ~~vinyl~~ **acetal** resins contg. org. Si group in **side chains** and thermosetting resins. Thus, an aq. soln. of 320 g poly(vinyl alc.) (sapon. degree 99 mol%, d.p. 1700) was treated with 23 g 35% HCl at 40-50.degree. and 174 g PrCHO at 15-20.degree. in 2 portions to give 350 g polymer, which (60 g) was treated with 0.65 g 3-isocyanatopropyltriethoxysilane (I) at 50-60.degree. in MEK-toluene mixt., blended with 18 g resol phenolic resin (PL-2205) and 0.6 g Epikote 828 to give an adhesive, which was applied on a Cu foil, dried at 140-150.degree. and pressed on a phenolic resin-impregnated paper to give a laminate having solder resistance (JIS C 6481) 23 s vs. 8 for a laminate using an adhesive without I treatment.  
 IT **24801-88-5D**, reaction products with vinyl **acetal** polymers  
 (blends with thermosetting resins, heat-resistant, for adhesives and coatings on metals)  
 RN 24801-88-5 HCA  
 CN Silane, triethoxy(3-isocyanatopropyl)- (9CI) (CA INDEX NAME)



- IC ICM C08L029-14  
 ICS C08L061-00; C08L063-00  
 ICA C08F008-42  
 CC 38-3 (Plastics Fabrication and Uses)

- ST heat resistant vinyl **acetal** polymer; adhesive modified vinyl **acetal** polymer; thermosetting resin blend adhesive metal; silyl modified vinyl butyral polymer
- IT Phenolic resins, uses and miscellaneous  
(blends with modified poly(vinyl **acetals**) and epoxy resins, heat-resistant, for adhesives and coatings on metals)
- IT Epoxy resins, uses and miscellaneous  
(blends with modified poly(vinyl **acetals**) and phenolic resins, heat-resistant, for adhesives and coatings on metals)
- IT Adhesives  
(for metals, contg. silane-modified polyvinyl **acetal** and thermosetting resins)
- IT Vinyl **acetal** polymers  
(**acetal** butyrals, reaction products, with isocyanatopropyltriethoxysilane, blends with thermosetting resins, heat-resistant, for adhesives and coatings on metals)
- IT Vinyl **acetal** polymers  
(butyrals, reaction products, with isocyanatopropyltriethoxysilane, blends with thermosetting resins, heat-resistant, for adhesives and coatings on metals)
- IT 108956-42-9, PL 2205  
(blends with modified polyvinyl **acetals** and epoxy resins, heat-resistant, for adhesives and coatings on metals)
- IT 25068-38-6, Epikote 828  
(blends with modified polyvinyl **acetals** and phenolic resins, heat-resistant, for adhesives and coatings on metals)
- IT **24801-88-5D**, reaction products with vinyl **acetal** polymers  
(blends with thermosetting resins, heat-resistant, for adhesives and coatings on metals)

L70 ANSWER 45 OF 45 HCA COPYRIGHT 2006 ACS on STN

102:204384 Synthesis and properties of poly(cis-1,4-dihydroxy-2,3-epoxybutane). Vandenberg, E. J. (Res. Cent., Hercules Inc., Wilmington, DE, 19894, USA). Journal of Polymer Science, Polymer Chemistry Edition, 23(4), 951-70 (English) 1985. CODEN: JPLCAT. ISSN: 0449-296X.

AB 1,4-Dihydroxy-2,3-epoxybutane **cyclic acetone ketal**  
(I) polymerizes with iso-Bu3Al-0.7 water catalyst by a cationic mechanism at -78.degree.C to a moderate mol. wt. ( $\eta_{inh}$  up to 0.7), atactic (based on  $^{13}C$ -NMR) polymer (II) [90451-38-0]. At higher temp. and in bulk, 14% crosslinked polymer is obtained as a result of epoxide and **ketal** ring opening. Et3Al is an effective catalyst at 0-50.degree.C in bulk. II is readily hydrolyzed with aq. HCl treatment to atactic, water-sol. polymer with a Tg of 80.degree.C. Hydrolyzed II is melt stable to 200.degree.C and can be molded to give brittle, clear films that readily pick up 5-10% water from the atm. to give properties like

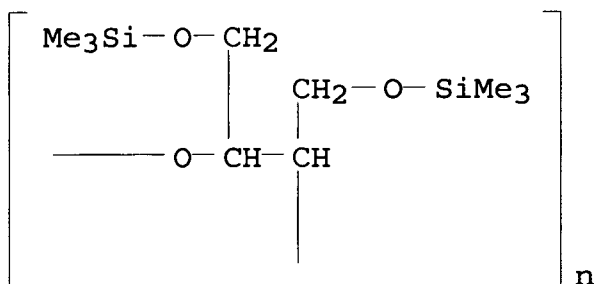
those of plasticized PVC. Hydrolyzed II is degraded by electron beam radiation but can be crosslinked with glyoxal-toluene sulfonic acid mixt.. The bis(trimethylsilyl) ether of 1,4-1,4-dihydroxy-2,3-epoxybutane as polymd. cationically with the iso-Bu<sub>3</sub>Al-0.7 water catalyst at -78.degree.C to a fairly tactic, presumably racemic di-isotactic, amorphous polymer [96499-21-7], with .eta.inh of 0.16. A mechanism is proposed for this stereoregular polymn. based on a complexation of the Si side group of the last chain unit with the propagating oxonium on.

IT 96439-57-5P 96499-21-7P

(prepn. of)

RN 96439-57-5 HCA

CN Poly[oxy[1,2-bis[[trimethylsilyl]oxy]methyl]-1,2-ethanediyl]] (9CI)  
(CA INDEX NAME)



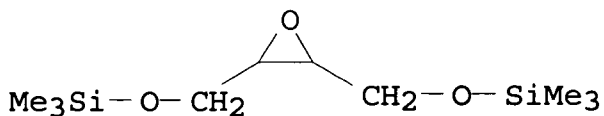
RN 96499-21-7 HCA

CN Silane, [2,3-oxiranediylbis(methyleneoxy)]bis[trimethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 96499-20-6

CMF C10 H24 O3 Si2



CC 35-4 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 36

IT 90451-38-0P 96439-54-2P 96439-56-4P 96439-57-5P  
96499-21-7P 96499-26-2P  
(prepn. of)

=> d 171 1-66 ti

L71 ANSWER 1 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Electrophotographic photoreceptors having surface layers with low friction coefficient

L71 ANSWER 2 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Photosensitive alkali-soluble polymer compositions and method for forming patterned films from them with good heat and moisture resistance, transparency, and dielectric properties

L71 ANSWER 3 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Acid generators and positively or negatively working radiation-sensitive resin compositions containing the same

L71 ANSWER 4 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Positive-working resist composition containing acid diffusion preventer

L71 ANSWER 5 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Positive-working alkali-developable light-sensitive polyimide precursor composition

L71 ANSWER 6 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Positively-working radiation resist resin composition containing substituted imidazole

L71 ANSWER 7 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Chemically amplified positive photoresists suppressing development defects

L71 ANSWER 8 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Positive photoimaging materials containing polybenzoxazole precursors and pattern formation thereby

L71 ANSWER 9 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Electrically conductive glass and its manufacture

L71 ANSWER 10 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Photosensitive polyamic acid composition and formation of polyimide positive pattern

L71 ANSWER 11 OF 66 HCA COPYRIGHT 2006 ACS on STN

TI Stereochemistry of the Allylation and Crotylation Reactions of .alpha.-Methyl-.beta.-hydroxy Aldehydes with Allyl- and Crotyltrifluorosilanes. Synthesis of anti,anti-Dipropionate Stereotriads and Stereodivergent Pathways for the Reactions with 2,3-anti- and 2,3-syn-.alpha.-Methyl-.beta.-hydroxy Aldehydes

- L71 ANSWER 12 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Reaction Monitoring in LPOS by  $^{19}\text{F}$  NMR. Study of Soluble Polymer Supports with Fluorine in Spacer or Linker Components of Supports
- L71 ANSWER 13 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Polymer compound from silsesquioxane resin, resist material and method of patterning
- L71 ANSWER 14 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Acrylic polysiloxane coating composition, cured product, laminate and method for producing the cured product
- L71 ANSWER 15 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Heat-resistant resin compositions useful for semiconductor devices with good adhesion and low absorbance
- L71 ANSWER 16 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Simplified method to produce nanoporous silicon-based films for device applications
- L71 ANSWER 17 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Heat-resistant photoresist resin composition containing specific polymer and specific mixed solvent providing controlled composition viscosity
- L71 ANSWER 18 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Methods for characterizing, classifying, and identifying unknowns in samples
- L71 ANSWER 19 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Positive photosensitive resin precursor composition and process for producing same
- L71 ANSWER 20 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Rolls of anisotropically conductive adhesive films for electric connection of fine circuits
- L71 ANSWER 21 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Cyclopropanation reactions catalyzed by copper and rhodium complexes homogeneous and heterogenized on a modified USY-zeolite. Influence of the catalyst on the catalytic profile
- L71 ANSWER 22 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Method for manufacture of heat-resistant resin precursors with low chlorine ion content and photosensitive compositions containing them
- L71 ANSWER 23 OF 66 HCA COPYRIGHT 2006 ACS on STN

- TI Crosslinked sulfonated polymers and method for preparing same
- L71 ANSWER 24 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Electrophotographic color image formation for high-quality copying
- L71 ANSWER 25 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Cluster analysis of McReynolds constants for 384 gas chromatographic stationary phases
- L71 ANSWER 26 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Polyfunctional siloxane macromers and soft eye-care materials using the same with good soil repellency and balance of physical properties
- L71 ANSWER 27 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Manufacture of staining- and weather-resistant fluoropolymers with excellent elongation
- L71 ANSWER 28 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Choosing polymer coatings for gas and liquid chemical microsensors
- L71 ANSWER 29 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Weather-resistant fluoropolymer coatings with low toxicity
- L71 ANSWER 30 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Alignment layer material for liquid crystal display devices
- L71 ANSWER 31 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Curable coating compositions containing fluoropolymers resistant to acid rain, scratch, fouling, and weather
- L71 ANSWER 32 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Curable fluoropolymer coating compositions
- L71 ANSWER 33 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Coating compositions containing fluoropolymers resistant to acid rain, scratch, fouling, and weather
- L71 ANSWER 34 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Coating compositions containing fluoropolymers resistant to acid rain, scratch, fouling, and weather
- L71 ANSWER 35 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Copolymers for manufacturing contact or intraocular lenses with improved transparency, oxygen permeability and impact-resistance
- L71 ANSWER 36 OF 66 HCA COPYRIGHT 2006 ACS on STN
- TI Hydrogen bonding. Part 29. Characterization of 14 sorbent coatings

for chemical microsensors using a new solvation equation

- L71 ANSWER 37 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Highly-refractive composite material and fabrication of optically active materials which contain it.
- L71 ANSWER 38 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Method of forming an electrophotographic color transfer image and electrophotographic light-sensitive material for use therein.
- L71 ANSWER 39 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI thermal-transfer recording material
- L71 ANSWER 40 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI The .sigma.-.pi. and n-.pi. stabilization energies in vinyl and phenyl compounds
- L71 ANSWER 41 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Thixotropic magnetorheological materials
- L71 ANSWER 42 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI polymer contact lenses with smooth edges and excellent optical properties
- L71 ANSWER 43 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Color electrophotographic copying method
- L71 ANSWER 44 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Heat-resistant polyimide photosensitive materials
- L71 ANSWER 45 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI **Hemiacetal** or **hemiketal** ester-protected functional group-containing vinyl polymers for coatings
- L71 ANSWER 46 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Storage-stable one-liquid fluorine-containing thermosetting compositions for soiling- and weather-resistant coating materials
- L71 ANSWER 47 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Storable fluorine-containing thermosetting compositions for soiling- and weather-resistant coating materials
- L71 ANSWER 48 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Automotive parts having semipermanent antifogging effects
- L71 ANSWER 49 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Antiglare transparent plastic material

- L71 ANSWER 50 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Water-thinned fluoropolymer dispersions and coating compositions
- L71 ANSWER 51 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Electrophotographic photoreceptor with undercoat layer comprising zirconium oxide and cured poly(vinyl **acetal**) resin
- L71 ANSWER 52 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Curable resin compositions for coating materials
- L71 ANSWER 53 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Electrophotographic photoconductors
- L71 ANSWER 54 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Oxygen-permeable resin compositions
- L71 ANSWER 55 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Storage-stable, curable compositions containing polymers with hydrolyzable silyl groups
- L71 ANSWER 56 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Stabilized hydrolyzable silyl group-containing coating compositions
- L71 ANSWER 57 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Titanocenes and their use as photoinitiators
- L71 ANSWER 58 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Organosilicon compounds. LXXXVI. C-Silylated aldehydes
- L71 ANSWER 59 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Improved procedure for calculating the collision stopping power of elements and compounds for electrons and positrons
- L71 ANSWER 60 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Halogenated and silicated **acetals** and their polymers and copolymers
- L71 ANSWER 61 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Electron transfer in reactions of nitroso compounds. XII.  
Interaction of trifluoronitrosomethane with nucleophilic olefins
- L71 ANSWER 62 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Addition of hexafluoroacetone to alkoxy silanes
- L71 ANSWER 63 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Correlation of latent heats and entropies of vaporization with temperature

L71 ANSWER 64 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Synthesis of new forms of silicon-bearing polymers

L71 ANSWER 65 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Poly(vinyl **acetals**)

L71 ANSWER 66 OF 66 HCA COPYRIGHT 2006 ACS on STN  
TI Modified poly(vinyl **acetal**) resin compositions

=> d 171 2,3,4,7,13,17,19 cbib abs hitstr hitind

L71 ANSWER 2 OF 66 HCA COPYRIGHT 2006 ACS on STN  
142:269168 Photosensitive alkali-soluble polymer compositions and method for forming patterned films from them with good heat and moisture resistance, transparency, and dielectric properties. Makabe, Hiroaki; Takeuchi, Etsu (Sumitomo Bakelite Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005062407 A2 20050310, 22 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-291507 20030811.

AB The compns., useful for dielecs. and protective films for displays and printed circuit boards, contain polymers (A) prepd. by reacting .gtoreq.1 benzocyclobutene compds. (A1) selected from X1(CH2:CH)mR2Y [X1 = alkyl-(un)substituted bicyclo(4.2.0)octa-1,3,5-trien-3-yl; R2 = C.ltoreq.2 alkylene, single bond; Y = OH-substituted Ph; m = 0-2], [X1(CH:CH)mR2C:ONH]2R3 (X1, R2, m = same as above; R3 = .gtoreq.1-OH-contg. divalent cyclic group), XR4Y (Y = same as above; X = bicyclo(4.2.0)octa-1,3,5-trien-3-yl; R4 = CH2, CO), and XOH (X = same as above) and compds. (A2) bearing .gtoreq.2 benzocyclobutene structures at 100-200.degree. and photoacid generators (B), wherein 5-80% of OH groups in A are substituted with C2-20 alkoxy carbonyl, C2-20 alkoxyalkyl, C1-10 alkyl-substituted silyl, tetrahydropyranyl, and/or tetrahydrofuranlyl groups. The method contains forming layers of the compns. on substrates, pattern-exposing them, developing them in aq. alk. solns., post-exposing them, and thermally curing them in inert gases at 100-250.degree..

IT **845745-34-8P**

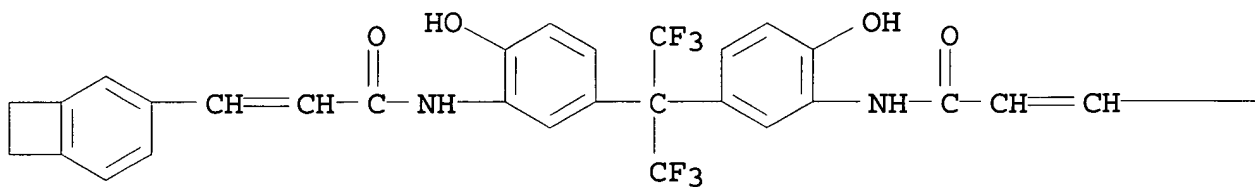
(for alkali-sol. polymer prepn.; photoimaging compns. contg. alkali-sol. benzocyclobutene polymers bearing substituted OH groups for patterned films with good heat and moisture resistance, transparency, dielec. properties)

RN 845745-34-8 HCA

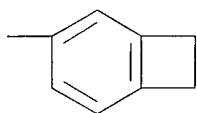
CN 2-Propenamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[3-bicyclo[4.2.0]octa-1,3,5-trien-3-yl-, polymer with 4-(3-bicyclo[4.2.0]octa-1,3,5-trien-3-yl-2-propenyl)-1,2-benzenediol and 1,3-bis(2-bicyclo[4.2.0]octa-1,3,5-trien-3-ylethenyl)-1,1,3,3-tetramethyldisiloxane (9CI) (CA INDEX NAME)

CRN 845745-33-7  
CMF C37 H28 F6 N2 O4

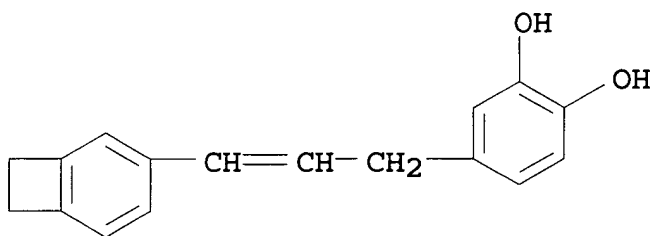
PAGE 1-A



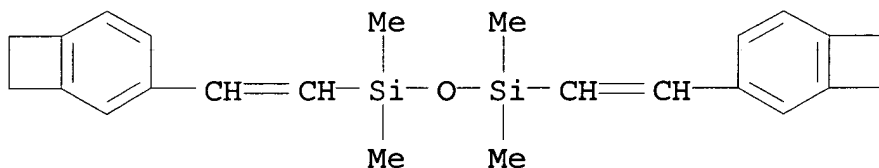
PAGE 1-B



CRN 845745-30-4  
CMF C17 H16 O2



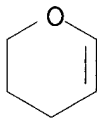
CRN 117732-87-3  
CMF C24 H30 O Si2



IT 110-87-2DP, 3,4-Dihydro-2H-pyran, reaction products with  
with hydroxy-contg. benzocyclobutene polymer 845783-82-6P  
(thermally cured; photoimaging compns. contg. alkali-sol.  
benzocyclobutene polymers bearing substituted OH groups for  
patterned films with good heat and moisture resistance,  
transparency, dielec. properties)

RN 110-87-2 HCA

CN 2H-Pyran, 3,4-dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 845783-82-6 HCA

CN 2-Propenamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[3-bicyclo[4.2.0]octa-1,3,5-trien-3-yl-, polymer with  
4-(3-bicyclo[4.2.0]octa-1,3,5-trien-3-yl-2-propenyl)-1,2-benzenediol  
and 1,3-bis(2-bicyclo[4.2.0]octa-1,3,5-trien-3-ylethenyl)-1,1,3,3-tetramethyldisiloxane, 1,1-dimethylethyl carbonate (ester) (9CI)  
(CA INDEX NAME)

CM 1

CRN 51300-90-4

CMF C5 H10 O3

t-Bu-O-CO<sub>2</sub>H

CM 2

CRN 845745-34-8

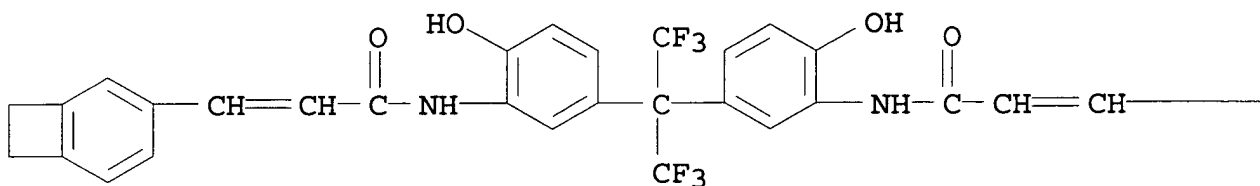
CMF (C37 H28 F6 N2 O4 . C24 H30 O Si2 . C17 H16 O2)x

CCI PMS

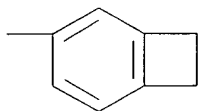
CM 3

CRN 845745-33-7  
CMF C37 H28 F6 N2 O4

PAGE 1-A

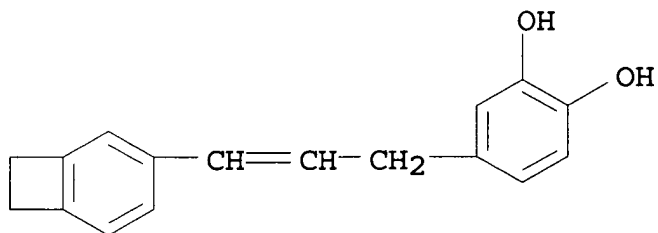


PAGE 1-B



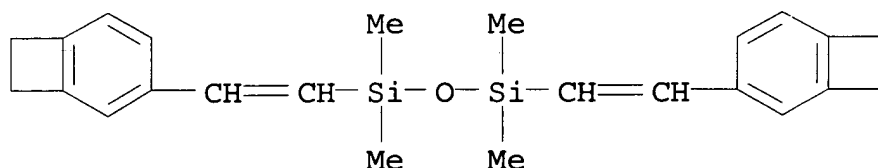
CM 4

CRN 845745-30-4  
CMF C17 H16 O2



CM 5

CRN 117732-87-3  
CMF C24 H30 O Si2



IC ICM G03F007-039  
ICS C08G061-06; G03F007-033; G03F007-075; G03F007-38; G03F007-40;  
H01L021-027

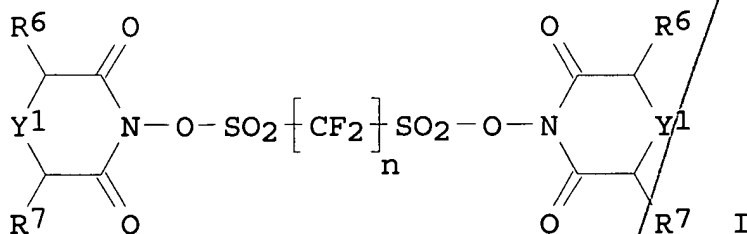
CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 25, 38, 76

IT 845745-31-5P **845745-34-8P** 845745-40-6P 845752-29-6P  
(for alkali-sol. polymer prepn.; photoimaging compns. contg.  
alkali-sol. benzocyclobutene polymers bearing substituted OH  
groups for patterned films with good heat and moisture  
resistance, transparency, dielec. properties)

IT **110-87-2DP**, 3,4-Dihydro-2H-pyran, reaction products with  
with hydroxy-contg. benzocyclobutene polymer 845745-31-5DP,  
tetrahydropyranyl-substituted **845783-82-6P** 845783-83-7P  
845783-84-8P 845783-88-2P  
(thermally cured; photoimaging compns. contg. alkali-sol.  
benzocyclobutene polymers bearing substituted OH groups for  
patterned films with good heat and moisture resistance,  
transparency, dielec. properties)

L71 ANSWER 3 OF 66 HCA COPYRIGHT 2006 ACS on STN  
142:65319 Acid generators and positively or negatively working  
radiation-sensitive resin compositions containing the same. Ibata,  
Satoshi; Nagai, Tomoki; O, Isamu (JSR Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2004359590 A2 20041224, 63 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2003-158808 20030604.

GI



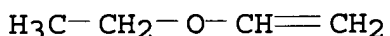
AB The acid generators comprise compds. having the structure of

SO<sub>2</sub>(CF<sub>2</sub>)<sub>n</sub>SO<sub>2</sub> (n = 2-10 integer), preferably, disulfonic acid onium salts SO<sub>3</sub>-(CF<sub>2</sub>)<sub>n</sub>SO<sub>3</sub>- 2M<sup>+</sup> (n = 2-10 integer; M<sup>+</sup> = monovalent onium cation). Preferably, M<sup>+</sup> comprises sulfonium cations R<sub>1</sub>R<sub>2</sub>R<sub>3</sub>S<sup>+</sup> or iodonium cations R<sub>4</sub>R<sub>5</sub>I<sup>+</sup> (R<sub>1</sub>-R<sub>5</sub> = C<sub>1</sub>-10 alkyl, C<sub>6</sub>-18 aryl; .gtoreq.1 of R<sub>1</sub>-R<sub>3</sub> may be bonded together and form ring with S; R<sub>4</sub> and R<sub>5</sub> may be bonded together and form ring with I). Acid generators comprising N,N'-di(sulfonyloximides) I (n = 2-10 integer; R<sub>6</sub>, R<sub>7</sub> = H, monovalent org. group; R<sub>6</sub> and R<sub>7</sub> bonding to the same imide ring may be bonded together and form ring; Y<sub>1</sub> = single bond, double bond, divalent org. group) are also claimed. The pos. working radiation-sensitive resin compns. contain (A) radiation-sensitive acid generators involving any of the above-mentioned acid generators and (B) resins which are insol. or slightly sol. in alkalis, bear acid-dissociable groups, and become sol. in alkalis upon dissocn. of the acid-dissociable groups. The neg.-working radiation-sensitive resin compns. contain (A) radiation-sensitive acid generators involving any of the above-mentioned acid generators, (C) alkali-sol. resins, and (D) compds. capable of crosslinking the alkali-sol. resins in the presence of acids. The acids generated from the acid generators have sufficiently high acidity and b.p., the diffusion length of the acids in resist films is appropriately short, mask pattern dependency is small, and focus depth is excellent.

IT 109-92-2DP, Ethyl vinyl ether, reaction products with 4-tert-butoxystyrene-4-hydroxystyrene copolymer 479628-09-6P (disulfonic acid generators for pos. or neg. working radiation-sensitive resist compns.)

RN 109-92-2 HCA

CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



RN 479628-09-6 HCA

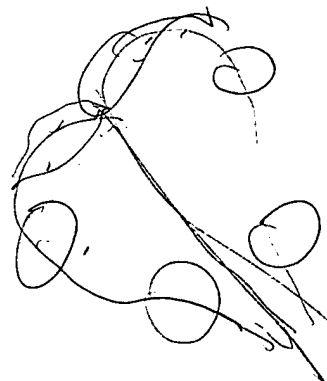
CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(triethoxysilyl)-, 1,1-dimethylethyl ester, polymer with triethoxymethylsilane and 5(or 6)-(triethoxysilyl)-.alpha.,.alpha.-bis(trifluoromethyl)bicyclo[2.2.1]heptane-2-ethanol (9CI) (CA INDEX NAME)

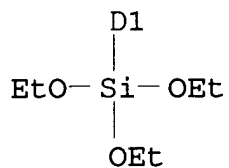
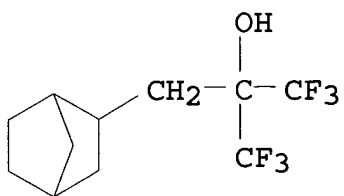
CM 1

CRN 365546-74-3

CMF C17 H28 F6 O4 Si

CCI IDS



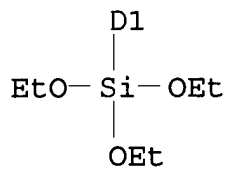
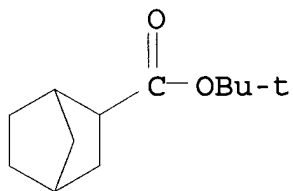


CM 2

CRN 365546-63-0

CMF C18 H34 O5 Si

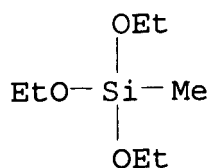
CCI IDS



CM 3

CRN 2031-67-6

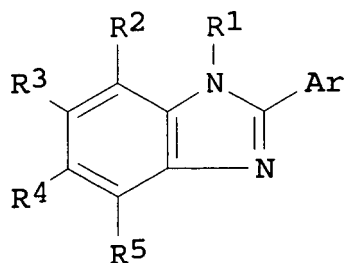
CMF C7 H18 O3 Si



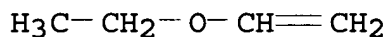
IC ICM C07C309-06  
 ICS C07C381-12; C07D207-46; C07D209-52; C07D221-14; C07D491-18;  
 G03F007-004; G03F007-038; G03F007-039; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 IT **109-92-2DP**, Ethyl vinyl ether, reaction products with  
 4-tert-butoxystyrene-4-hydroxystyrene copolymer 95418-60-3DP,  
 4-tert-Butoxystyrene homopolymer, partially hydrolyzed  
 123589-22-0DP, 4-tert-Butoxystyrene-4-hydroxystyrene copolymer,  
 reaction products with Et vinyl ether 123589-22-0P,  
 4-tert-Butoxystyrene-4-hydroxystyrene copolymer 200808-68-0P,  
 tert-Butyl acrylate-4-hydroxystyrene-styrene copolymer  
 221549-67-3DP, 4-Acetoxystyrene-tert-butyl acrylate-styrene  
 copolymer, hydrolyzed 288622-96-8P, 4-tert-Butoxystyrene-4-  
 hydroxystyrene-styrene copolymer 340964-24-1P 340964-38-7P  
 406198-64-9DP, 4-Acetoxystyrene-4-tert-butoxystyrene-styrene  
 copolymer, hydrolyzed 428516-13-6P **479628-09-6P**  
 670248-60-9P 690258-42-5P 726175-42-4P  
 (disulfonic acid generators for pos. or neg. working  
 radiation-sensitive resist compns.)

L71 ANSWER 4 OF 66 HCA COPYRIGHT 2006 ACS on STN  
 141:215624 Positive-working resist composition containing acid diffusion  
 preventer. Toneri, Tatsuya; Wang, Yong (JSR Ltd., Japan). Jpn.  
 Kokai Tokkyo Koho JP 2004233450 A2 20040819, 36 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 2003-19147 20030128.

GI



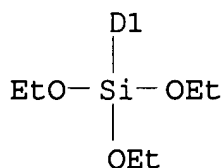
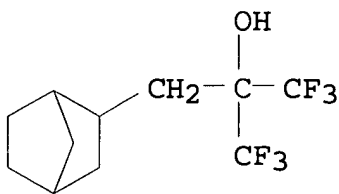
- AB The compn. contains (A) I [R1 = C1-20 (un)substituted alkyl; R2-5 = H, cyano, nitro, halo, sulfonyl, OH, carbonyl, alkyl substituted with the group, (un)substituted C1-20 alkyl, C3-20 alicyclic group, C2-20 alkenyl, aryl, heteroaryl; Ar = (un)substituted aryl; R1-5 may bond to form a ring, dimer or polymer], (B) a radiation-sensitive acid generator, and (C) a resin bearing acid-releasable group, which is insol. or slightly soln. in alk. soln. and becoming soln. in the soln. by the action of an acid. The compn. contains (A), (B), (D) an alkali-sol. resin, and (E) compd. which crosslinks the resin in the presence of an acid. The compn. shows high resoln. and storage stability.
- IT 109-92-2DP, Ethyl vinyl ether, ethers with hydroxystyrene polymer 741292-67-1P  
(pos.-working resist compn. contg. acid diffusion preventer)
- RN 109-92-2 HCA
- CN Ethene, ethoxy- (9CI) (CA INDEX NAME)



- RN 741292-67-1 HCA
- CN Bicyclo[2.2.1]heptane-2-carboxylic acid, 5(or 6)-(triethoxysilyl)-, 1,1-dimethylethyl ester, polymer with 5(or 6)-(triethoxysilyl)-.alpha.,.alpha.-bis(trifluoromethyl)bicyclo[2.2.1]heptane-2-ethanol (9CI) (CA INDEX NAME)

CM 1

CRN 365546-74-3  
CMF C17 H28 F6 O4 Si  
CCI IDS

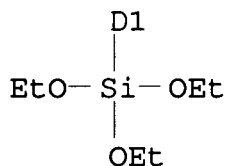
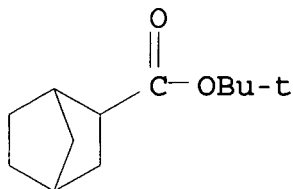


CM 2

CRN 365546-63-0

CMF C18 H34 O5 Si

CCI IDS



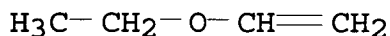
- IC ICM G03F007-039  
ICS G03F007-004; G03F007-038; H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38
- IT **109-92-2DP**, Ethyl vinyl ether, ethers with hydroxystyrene polymer 129674-22-2DP, p-tert-Butoxycarbonyloxystyrene-p-hydroxystyrene copolymer, hydrolyzed, ethers with Et vinyl ether 340964-24-1P, 2-Methyladamantane-2-yl methacrylate-5-oxo-4-oxatricyclo[4.2.1.0<sup>3,7</sup>]nona-2-yl methacrylate copolymer 406198-64-9DP, p-Acetoxystyrene-p-tert-butoxystyrene-styrene copolymer, hydrolyzed 670248-60-9P **741292-67-1P**  
(pos.-working resist compn. contg. acid diffusion preventer)

L71 ANSWER 7 OF 66 HCA COPYRIGHT 2006 ACS on STN

140:243596 Chemically amplified positive photoresists suppressing development defects. Momota, Atsushi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004078105 A2 20040311, 69 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-241946 20020822.

- AB The photoresists contain (A) oxime sulfonates R<sub>1</sub>R<sub>2</sub>C:NO<sub>3</sub>SR<sub>3</sub> [R<sub>1</sub>, R<sub>2</sub> = alk(en)yl, alkynyl, aryl, heterocycle, cyano; R<sub>3</sub> = alkyl, aryl], (B) resins increasing alkali soly. by acid attack and contg. OCHMeO(CR<sub>4</sub>R<sub>5</sub>)<sub>m</sub>Z (R<sub>4</sub>, R<sub>5</sub> = H, alkyl; Z = alkyl; m = 1-20), (C) fluoro polymers prep'd. from H<sub>2</sub>CR<sub>6</sub>COX(CH<sub>2</sub>)<sub>p</sub>(CF<sub>2</sub>CF<sub>2</sub>)<sub>q</sub>F [R<sub>6</sub> = H, Me; X = O, S, NR<sub>7</sub> (R<sub>7</sub> = H, C1-4 alkyl); p = 1-6 ; q = 2-4], and optionally (D)

IT diazodisulfones R8SO2C:N2SO2R9 (R8, R9 = alkyl, aryl).  
**109-92-2DP**, Ethyl vinyl ether, reaction products with  
 polyhydroxystyrene  
 (acid-labile components; chem. amplified pos. photoresists contg.  
 fluoroalkyl acrylate-polymd. surfactants and suppressing  
 development defects)  
 RN 109-92-2 HCA  
 CN Ethene, ethoxy- (9CI) (CA INDEX NAME)

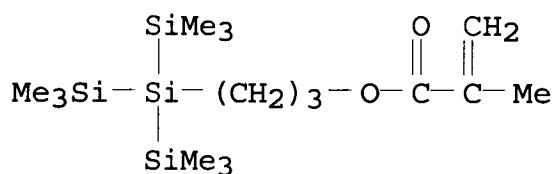


IT **668476-75-3P**  
 (surfactants; chem. amplified pos. photoresists contg.  
 fluoroalkyl acrylate-polymd. surfactants and suppressing  
 development defects)  
 RN 668476-75-3 HCA  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptafluorodecyl  
 2-propenoate, .alpha.-(2-methyl-1-oxo-2-propenyl)-.omega.-  
 methoxypoly(oxy-1,2-ethanediyl), 2-propenoic acid and  
 3-[2,2,2-trimethyl-1,1-bis(trimethylsilyl)disilanyl]propyl  
 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 114349-68-7

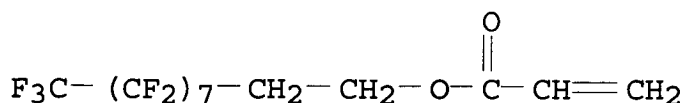
CMF C16 H38 O2 Si4



CM 2

CRN 27905-45-9

CMF C13 H7 F17 O2

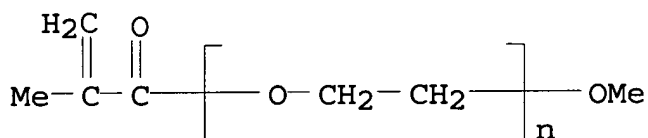


CM 3

CRN 26915-72-0

CMF (C2 H4 O)n C5 H8 O2

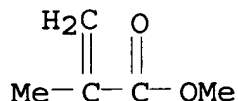
CCI PMS



CM 4

CRN 80-62-6

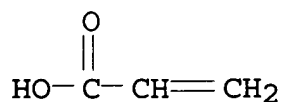
CMF C5 H8 O2



CM 5

CRN 79-10-7

CMF C3 H4 O2



IC ICM G03F007-039

ICS C08F020-24; C08F022-38; C08F028-02; C08F212-14; G03F007-004;  
H01L021-027CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

Section cross-reference(s): 38, 46

IT 75-29-6DP, Isopropyl chloride, reaction products with  
polyhydroxystyrene and Et vinyl ether **109-92-2DP**, Ethyl  
vinyl ether, reaction products with polyhydroxystyrene 926-02-3DP,  
tert-Butyl vinyl ether, reaction products with polyhydroxystyrene  
and cyclohexaneethanol 4442-79-9DP, Cyclohexaneethanol, reaction  
products with polyhydroxystyrene and tert-Bu vinyl ether  
103983-46-6DP, reaction products with hydrolyzed  
tert-butylstyrene-tert-butoxystyrene copolymer 325790-99-6DP,

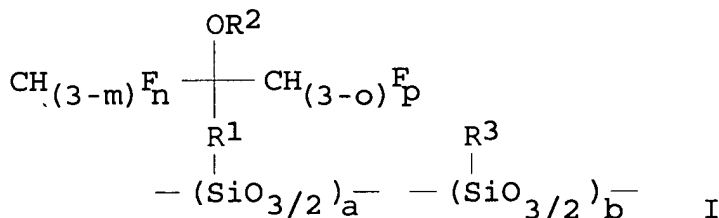
p-tert-Butoxystyrene-p-tert-butylstyrene copolymer, hydrolyzed, reaction products with cyclohexylethyl vinyl ether (acid-labile components; chem. amplified pos. photoresists contg. fluoroalkyl acrylate-polymerized. surfactants and suppressing development defects)

IT 668476-73-1P 668476-74-2P **668476-75-3P**  
(surfactants; chem. amplified pos. photoresists contg. fluoroalkyl acrylate-polymerized. surfactants and suppressing development defects)

L71 ANSWER 13 OF 66 HCA COPYRIGHT 2006 ACS on STN

137:255329 Polymer compound from silsesquioxane resin, resist material and method of patterning. Hatakeyama, Jun; Takahashi, Toshiaki; Watanabe, Atsushi; Ishihara, Toshinobu; Sasako, Masaru; Endo, Masataka; Kishimura, Shinji; Otani, Michitaka; Miyazawa, Satoru; Tsutsumi, Kentaro; Maeda, Kazuhiko (Shin-Etsu Chemical Industry Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.; Central Glass Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 2002268227 A2 **20020918**, 30 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-70217 20010313.

GI



AB The polymer compd. is represented by I (R1 = C1-20 divalent hydrocarbon, bridged cyclohydrocarbon; R2 = acid unstable group; 0.ltoreq.m.ltoreq.3, 0.ltoreq.n.ltoreq.3, 0.ltoreq.o.ltoreq.3, 0.ltoreq.p.ltoreq.3, m + n = 3, o + p = 3, 0<(n + p).ltoreq.6; R3 = hydrophilic group free of F; and a, b = pos. integer). The resist material contains the polymer compd., an org. solvent, a photoacid, and optionally, a basic compd. and a dissoln. inhibitor. The process uses an electron beam or a high-energy beam .ltoreq.300 nm and involves an etching step using an O plasma or a Cl- or Br-contg. gas. The use of the polymer compd. provided excellent sensitivity in .ltoreq.170 nm.

IT **461053-60-1P 461053-61-2P 461053-62-3P**  
(prepn. and patterning of silsesquioxane resin-based resist)

RN 461053-60-1 HCA

CN 2(3H)-Furanone, dihydro(trichlorosilyl)-, polymer with

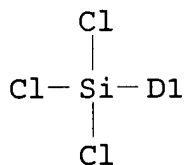
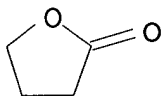
2,2,2-trifluoro-1-[[5(or 6)-(trichlorosilyl)bicyclo[2.2.1]hept-2-yl)methyl]-1-(trifluoromethyl)ethyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 461053-57-6

CMF C4 H5 Cl3 O2 Si

CCI IDS

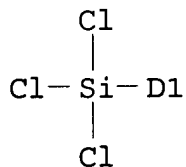
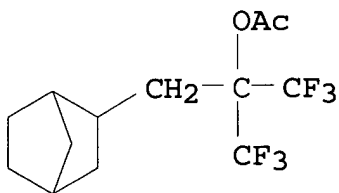


CM 2

CRN 393836-43-6

CMF C13 H15 Cl3 F6 O2 Si

CCI IDS



RN 461053-61-2 HCA

CN Spiro[bicyclo[2.2.1]heptane-2,3'-(2'H)-furan]-5'-(4'H)-one, 5(or 6)-(trichlorosilyl)-, polymer with 2,2,2-trifluoro-1-[[5(or

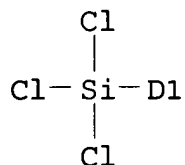
6)-(trichlorosilyl)bicyclo[2.2.1]hept-2-yl)methyl]-1-(trifluoromethyl)ethyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 461053-58-7

CMF C10 H13 Cl3 O2 Si

CCI IDS

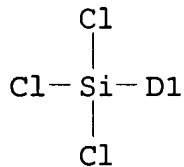
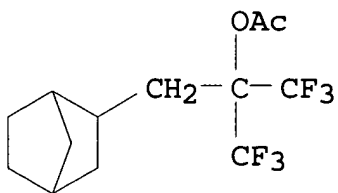


CM 2

CRN 393836-43-6

CMF C13 H15 Cl3 F6 O2 Si

CCI IDS



RN 461053-62-3 HCA

CN Bicyclo[2.2.1]heptane-2-ethanol, 5(or 6)-(trichlorosilyl)-.alpha.,.alpha.-bis(trifluoromethyl)-, acetate, polymer with

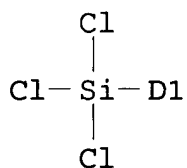
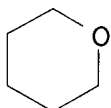
tetrahydro(trichlorosilyl)-2H-pyran (9CI) (CA INDEX NAME)

CM 1

CRN 461053-59-8

CMF C5 H9 Cl3 O Si

CCI IDS

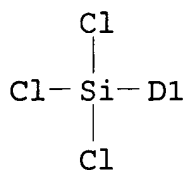
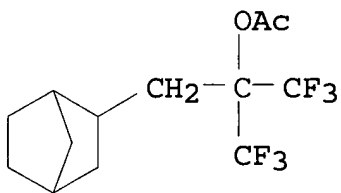


CM 2

CRN 393836-43-6

CMF C13 H15 Cl3 F6 O2 Si

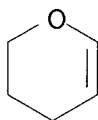
CCI IDS



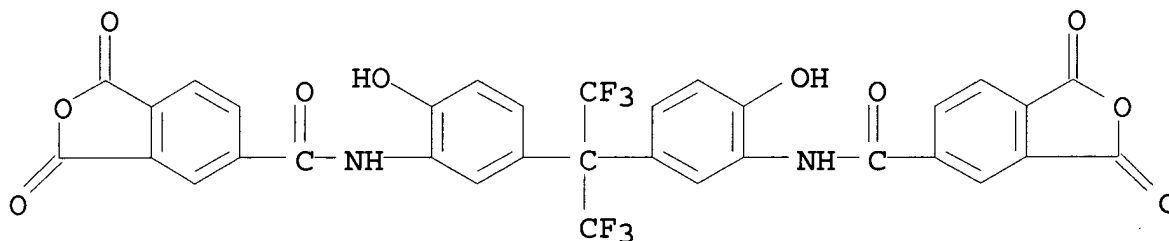
IT 110-87-2, 3,4-Dihydro-2H-pyran  
(prepn. of silsesquioxane resin-based resist)

RN 110-87-2 HCA

CN 2H-Pyran, 3,4-dihydro- (8CI, 9CI) (CA INDEX NAME)



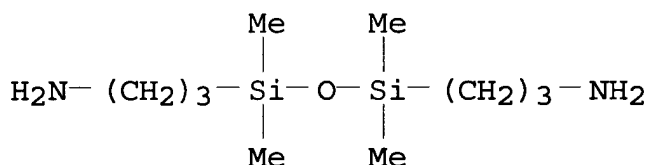
- IC ICM G03F007-075  
ICS C08G077-22; C08K005-00; C08L083-08; G03F007-004; G03F007-039;  
H01L021-027
- CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 35, 38
- IT **461053-60-1P 461053-61-2P 461053-62-3P**  
(prepn. and patterning of silsesquioxane resin-based resist)
- IT 77-73-6, Dicyclopentadiene **110-87-2**, 3,4-Dihydro-2H-pyran  
646-97-9 10025-78-2, Trichlorosilane  
(prepn. of silsesquioxane resin-based resist)
- L71 ANSWER 17 OF 66 HCA COPYRIGHT 2006 ACS on STN  
134:374049 Heat-resistant photoresist resin composition containing  
specific polymer and specific mixed solvent providing controlled  
composition viscosity. Tomikawa, Masao; Fujita, Yoji; Suwa, Atsushi  
(Toray Industries, Inc., Japan). Jpn. Kokai Tokkyo Koho JP  
2001139806 A2 **20010522**, 12 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1999-325154 19991116.
- AB The compn. contains polymer [CO-R1(OR3)p(COOR5)r-CONH-  
R2(OR4)q(COOR6)s-NH]n ( R1-2 = (2-8)-valent C.gto req.2 group; R3-6 =  
H, mono-valent C1-20 alkyl, mono-valent orgs. with 1-3 unsat.  
groups; n = 3-100,000 integer; p, q = 0-4 integer; r, s = 0-2  
integer), a light-sensitive compd., and solvents. The compn., which  
contains the aforementioned polymer and the mixed solvents, provides  
the improved sensitivity and the decreased shrinkage after the cure  
without using a polar solvent such as N-2-methyl-2-pyridone.
- IT **236095-20-8P**  
(polymer in heat-resistant photoresist resin compn.)
- RN 236095-20-8 HCA
- CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-  
(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-  
dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine] and  
3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine]  
(9CI) (CA INDEX NAME)
- CM 1
- CRN 223255-30-9
- CMF C33 H16 F6 N2 O10



CM 2

CRN 2469-55-8

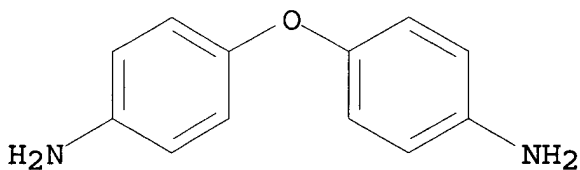
CMF C10 H28 N2 O Si2



CM 3

CRN 101-80-4

CMF C12 H12 N2 O



IC ICM C08L079-08

ICS G03F007-027; H01L021-027

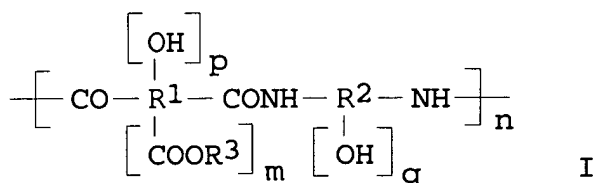
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 37

IT 121-90-4, 3-Nitrobenzoyl chloride 552-30-7, Trimellitic acid anhydride 1188-33-6, N,N-Dimethylformamide diethyl **acetal** 3770-97-6, 1,2-Naphthoquinone-2-diazide-5-sulfonyl chloride 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane (polymer in heat-resistant photoresist resin compn.)

IT 142541-99-9P **236095-20-8P** 340681-59-6P  
(polymer in heat-resistant photoresist resin compn.)

L71 ANSWER 19 OF 66 HCA COPYRIGHT 2006 ACS on STN  
 132:229506 Positive photosensitive resin precursor composition and process for producing same. Tomikawa, Masao; Okamoto, Naoyo; Yoshida, Satoshi; Okuda, Ryoji (Toray Industries, Inc., Japan). PCT Int. Appl. WO 2000014604 A1 **20000316**, 49 pp. DESIGNATED STATES: W: CN, KR, SG, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (Japanese). CODEN: PIXXD2. APPLICATION: WO 1999-JP4849 19990907. PRIORITY: JP 1998-255356 19980909; JP 1998-290481 19981013; JP 1998-315990 19981106.

GI



AB The invention relates to a pos. photosensitive resin precursor compn. comprising (a) a polymer consisting mainly of structural units bonded to each other in the manner shown by general formula I ( R1 = 3-8 valents C.gto req.2 org. group; R2 = 3-6 valents C.gto req.2 org. group; R3 = H, C1-20 org. group; n = 3-100,000 integer; m = 1, 2; p, q = 0-4 integer, p+q>0) and (b) a photo-acid generator, wherein the compn. is capable of forming a pattern through light irradiation and subsequent development, and has a total carboxyl group content of 0.02 to 2.0 mmol per g of the polymer. It provides a photosensitive resin compn. which is capable of alkali development and is highly sensitive.

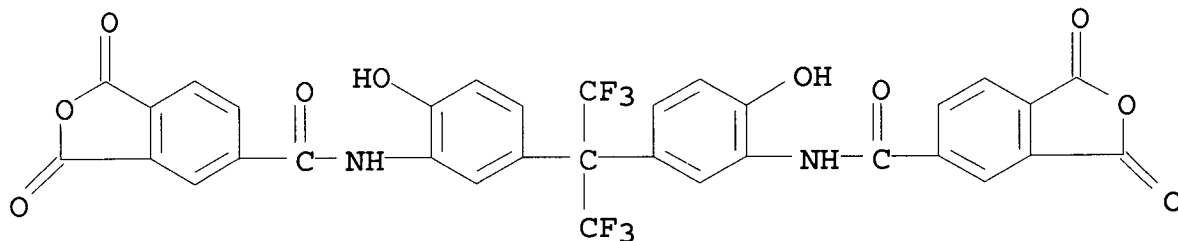
IT **261373-49-3DP**, reaction products with N,N-dimethylformamide di-Me **acetal 261373-53-9DP**, reaction products with N,N-dimethylformamide di-Me **acetal 261373-54-0DP**, reaction products with N,N-dimethylformamide di-Me **acetal 261373-55-1DP**, reaction products with N,N-dimethylformamide di-Me **acetal** (pos. photosensitive resin precursor compn.)

RN 261373-49-3 HCA

CN 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-, polymer with 4,4'-oxybis[benzenamine], 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] and 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[2-aminophenol] (9CI) (CA INDEX NAME)

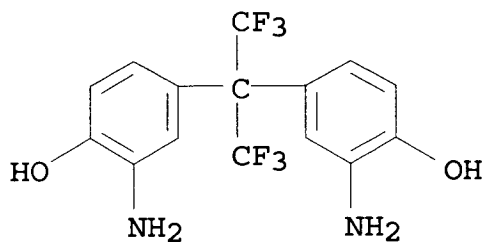
CM 1

CRN 223255-30-9  
 CMF C33 H16 F6 N2 O10



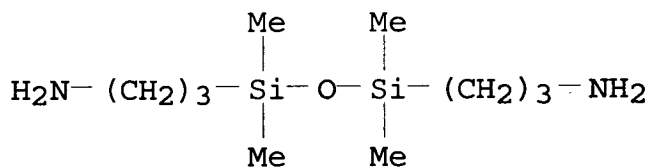
CM 2

CRN 83558-87-6  
 CMF C15 H12 F6 N2 O2



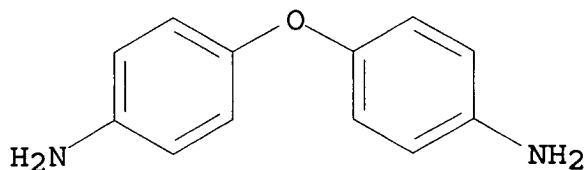
CM 3

CRN 2469-55-8  
 CMF C10 H28 N2 O Si2



CM 4

CRN 101-80-4  
 CMF C12 H12 N2 O



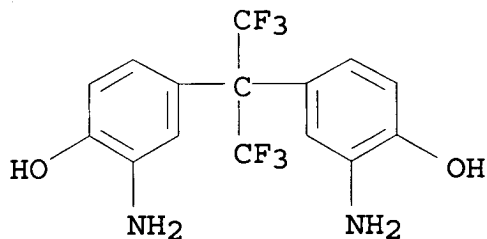
RN 261373-53-9 HCA

CN 1,3-Benzenedicarboxamide, N,N'-bis(5-amino-2-hydroxyphenyl)-, polymer with 5,5'-oxybis[1,3-isobenzofurandione], 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] and 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[2-aminophenol] (9CI) (CA INDEX NAME)

CM 1

CRN 83558-87-6

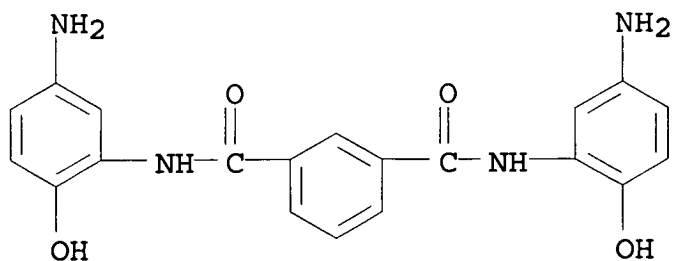
CMF C15 H12 F6 N2 O2



CM 2

CRN 25596-69-4

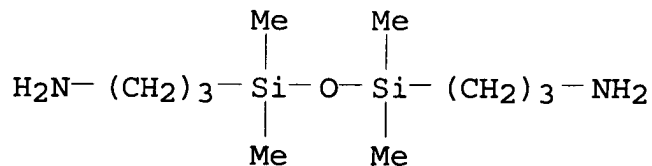
CMF C20 H18 N4 O4



CM 3

CRN 2469-55-8

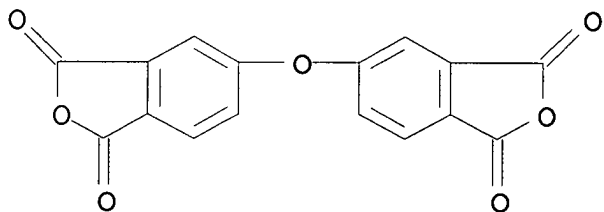
CMF C10 H28 N2 O Si2



CM 4

CRN 1823-59-2

CMF C16 H6 O7



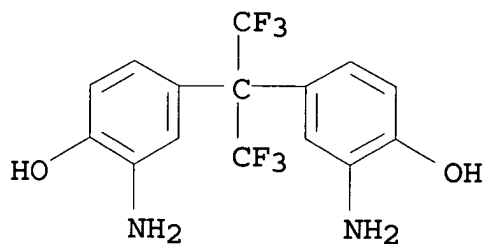
RN 261373-54-0 HCA

CN Benzamide, 3-amino-N-(5-amino-2-hydroxyphenyl)-, polymer with 5,5'-oxybis[1,3-isobenzofurandione], 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyloxy)bis[1-propanamine] and 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis[2-aminophenol] (9CI) (CA INDEX NAME)

CM 1

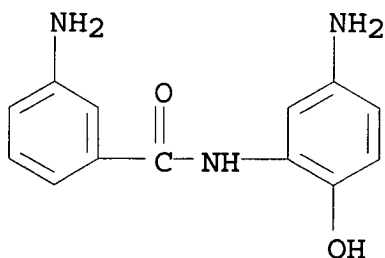
CRN 83558-87-6

CMF C15 H12 F6 N2 O2



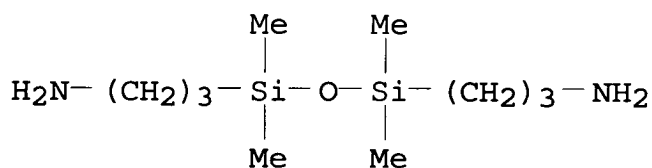
CM 2

CRN 27431-43-2  
CMF C13 H13 N3 O2



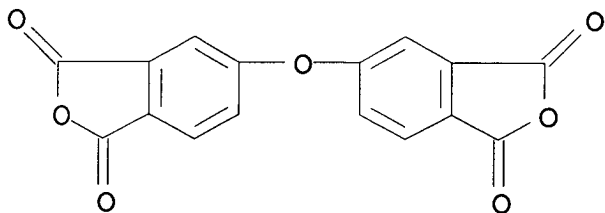
CM 3

CRN 2469-55-8  
CMF C10 H28 N2 O Si2



CM 4

CRN 1823-59-2  
CMF C16 H6 O7

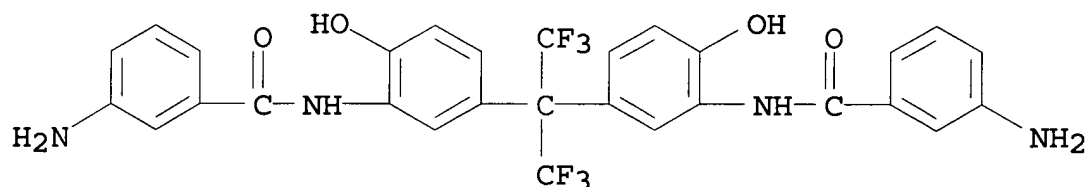


RN 261373-55-1 HCA  
CN Benzamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[3-amino-, polymer with 5,5'-oxybis[1,3-isobenzofurandione] and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine] (9CI) (CA INDEX NAME)

CM 1

CRN 220426-92-6

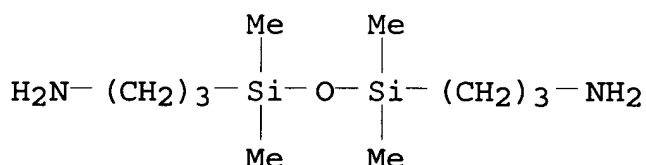
CMF C29 H22 F6 N4 O4



CM 2

CRN 2469-55-8

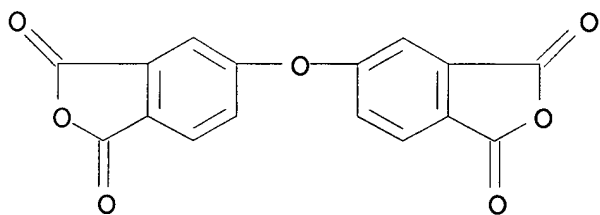
CMF C10 H28 N2 O Si2



CM 3

CRN 1823-59-2

CMF C16 H6 O7



IC ICM G03F007-039

ICS G03F007-037; G03F007-022; C08L079-08

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 35

IT 826-41-5DP, reaction products with polyamic acid 926-02-3DP,  
 reaction products with polyamic acid 926-65-8DP, reaction products  
 with polyamic acid 2182-55-0DP, reaction products with polyamic  
 acid 220426-98-2DP, reaction products with N,N-dimethylformamide  
 di-Me **acetal** 232589-11-6P 232589-14-9DP, reaction

products with N,N-dimethylformamide di-Me **acetal**, or cyclohexyl vinyl ether 261373-45-9P **261373-49-3DP**, reaction products with N,N-dimethylformamide di-Me **acetal** 261373-50-6DP, reaction products with N,N-dimethylformamide di-Me **acetal** **261373-53-9DP**, reaction products with N,N-dimethylformamide di-Me **acetal** **261373-54-0DP**, reaction products with N,N-dimethylformamide di-Me **acetal** **261373-55-1DP**, reaction products with N,N-dimethylformamide di-Me **acetal** 261503-21-3P 261503-45-1DP, reaction products with N,N-dimethylformamide di-Me **acetal** or cyclohexyl vinyl ether

(pos. photosensitive resin precursor compn.)

IT 99-57-0, 2-Amino-4-nitrophenol 99-63-8, Isophthalic acid chloride  
121-90-4, 3-Nitrobenzoyl chloride 1204-28-0 3770-97-6  
83558-87-6 88900-07-6 231963-06-7 261373-47-1D, reaction products with N,N-dimethylformamide dimethylacetal, or N-Me pyrrolidone diethylacetal, or t-Bu vinyl ether, or iso-Pr vinyl ether 261503-24-6D, reaction products with N,N-dimethylformamide di-Me **acetal**, or N-Me pyrrolidone di-Et **acetal**, or tert-Bu vinyl ether, or iso-Pr vinyl ether  
(pos. photosensitive resin precursor compn.)